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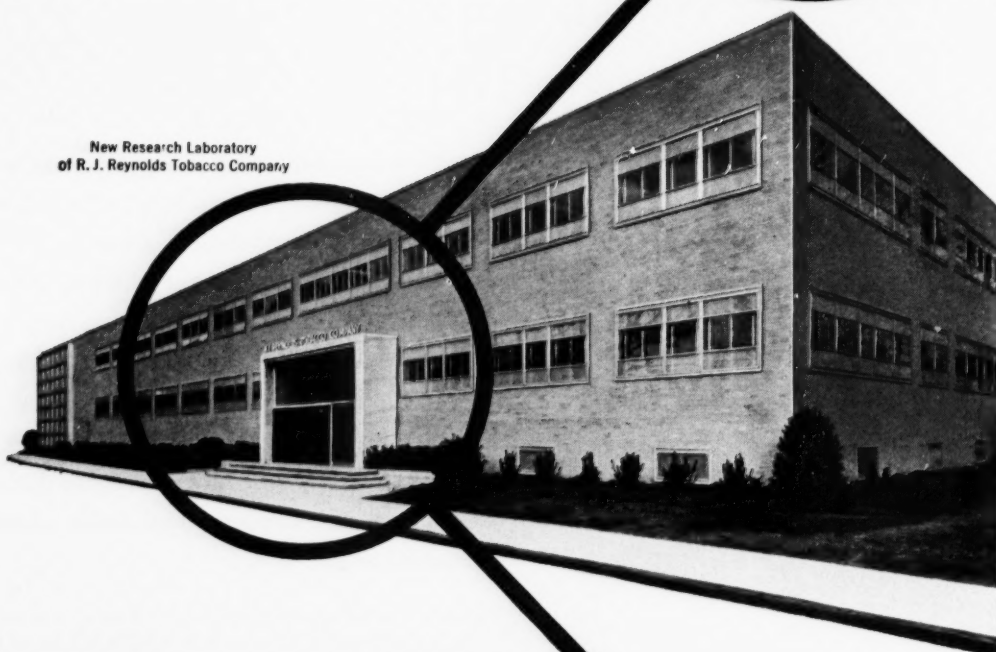
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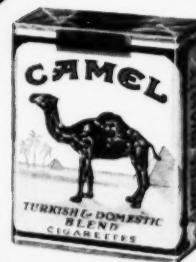
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1. Heller, E. M.: The Treatment of Essential
Hypertension. *Canad. Med. Assn.
Jour.*, 61:293, Sept., 1949.

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and the Diet after 50

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In the years beyond fifty, as well as before, continuous adequate protein nutrition remains an absolute necessity for maintenance of a normal concentration of plasma proteins and, in turn, a normal osmotic pressure of the plasma.⁶ Even more pronounced in the aged than in younger persons are the ill consequences of hypoproteinemia—edema, decreased resistance to generalized infection, retarded bone healing, and poor wound healing.⁷ Furthermore, dietary protein is essential for the continuous chemical regeneration of cell protein in the prevention of abnormal tissue wasting, one of the most characteristic and obvious changes in the geriatric patient.⁸

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REFERENCES

1. Freeman, J. T.: Basic Factors of Nutrition in Old Age, *Geriatrics* 2:41 (Jan.-Feb.) 1947.
2. Sherman, H. C.: Chemistry of Food and Nutrition, ed. 8, New York, The Macmillan Company, 1952, p. 208.
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7. Fishback, F. C.: Surgery in the Aged, *Clinics* 4:1250 (Feb.) 1946. Zintel, H. A.: The Role of Nutrition in Preoperative and Postoperative Care, *Am. J. M. Sc.* 207:204 (Feb.) 1944.
8. Kirk, J. E.: Nutrition and Aging, *Nutrition Rev.* 9:321 (Nov.) 1951.

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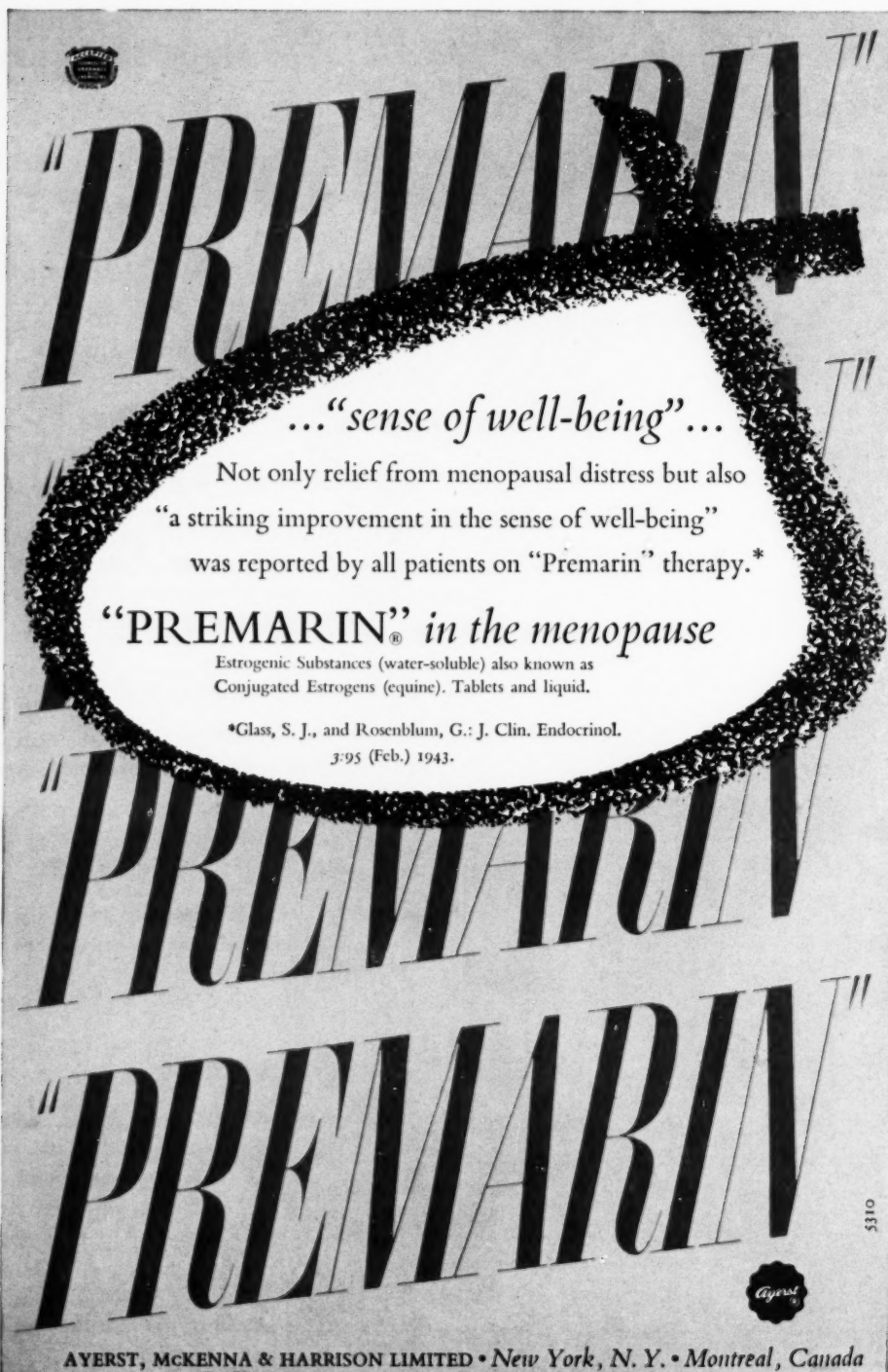


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*Glass, S. J., and Rosenblum, G.: J. Clin. Endocrinol.
3:95 (Feb.) 1943.

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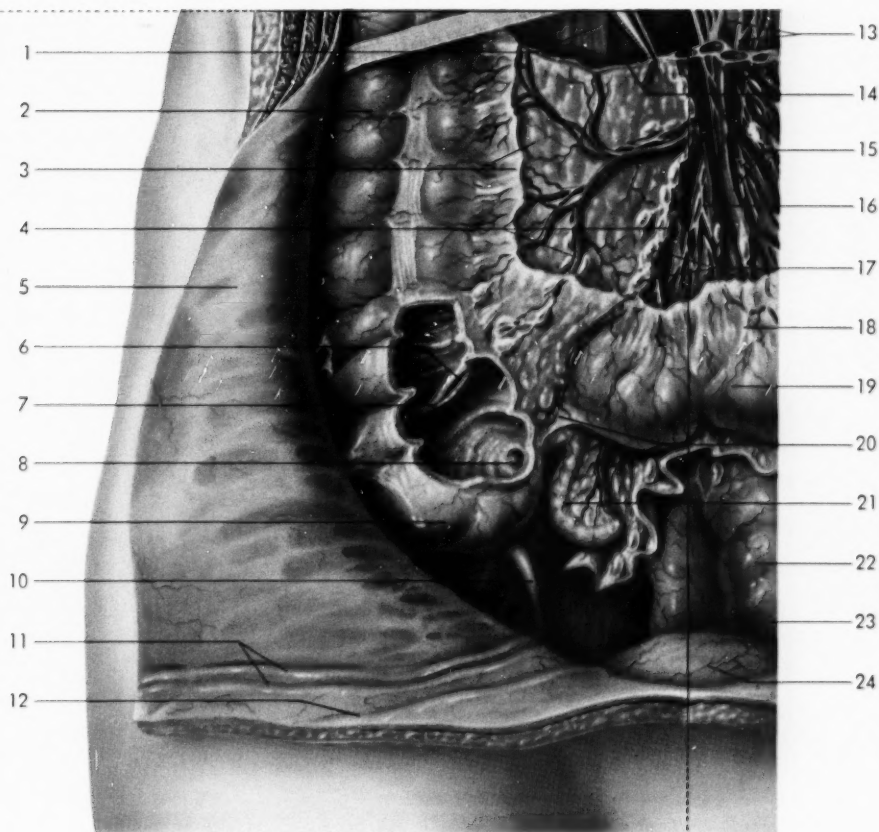
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Lower Right Quadrant of the Abdomen



- | | | |
|---|--|--|
| 1 Spermatic artery and vein | 9 Cecum | 17 Ileocecal lymph nodes |
| 2 Ascending colon | 10 Ureter and external iliac artery and vein | 18 Mesentery |
| 3 Mesocolon | 11 Epigastric artery and vein | 19 Ileum |
| 4 Branches of ileocolic artery and vein | 12 Lateral umbilical ligament | 20 Ileocecal fold and appendicular artery and vein |
| 5 Parietal peritoneum | 13 Aorta and abdominal aortic plexus | 21 Vermiform appendix |
| 6 Ileocecal valve | 14 Vena cava | 22 Sigmoid colon |
| 7 Frenum | 15 Intestinal arteries and veins | 23 Rectum |
| 8 Appendicocecal valve | 16 Sympathetic abdominal plexus | 24 Urinary bladder |

This is one of a series of paintings for Lederle by Paul Peck, illustrating the anatomy of various organs and tissues of the body which are frequently attacked by infection, where aureomycin may prove useful.

Lederle

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The advertisement features three illustrations of children. At the top, a boy is shown with a hand-drawn triangle around his head, with the text "SWALLOWED WHOLE" next to him. Below this, a girl is smiling and holding a glass of milk, with the text "CHEWED—OR IN FOOD OR LIQUID" next to her. At the bottom, a boy is shown with a hand-drawn circle around his head, with the text "DISSOLVED ON TONGUE" next to him. To the right of the children is a box of "FLAVORED Children's Size BAYER ASPIRIN". The box is labeled "24 TABLETS" and "PRICE 10¢". The text "NEW" is written in a box above the word "FLAVORED". The word "BAYER" is in large, bold letters, and "ASPIRIN" is below it. The text "CHILDREN'S SIZE" is above "BAYER".

NEW

FLAVORED

CHILDREN'S SIZE

BAYER

ASPIRIN

SWALLOWED WHOLE

CHEWED—OR IN FOOD OR LIQUID

DISSOLVED ON TONGUE

FLAVORED
Children's Size
BAYER
ASPIRIN
24 TABLETS
PRICE 10¢

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make 'Ilotycin,' Pediatric,
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like it, too.

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well tolerated
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every six hours
60 pounds—2 teaspoonfuls
every six hours

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MEDICAL SOCIETY OF DELAWARE
Hotel DuPont
WILMINGTON, DELAWARE

MONDAY, OCT. 12, 1953

8:30 p.m.—House of Delegates

TUESDAY, OCT. 13, 1953

9:30 a.m.—Invocation: Rev. John G. MacKinnon, Wilmington.

9:40 a.m.—Address of Welcome: Hon. August F. Walz, Wilmington.

9:50 a.m.—Report on House of Delegates: A. M. Gehret, Wilmington.

10:00 a.m.—Incidence of Common Bile Duct Disease Following Surgical Exploration: Daniel J. Preston, Wilmington and John W. Alden, Jr., Wilmington.

10:30 a.m.—Anesthesia Services in Delaware. R. Douglas Sanders, Wilmington.

11:00 a.m.—Exhibits.

11:30 a.m.—Report on Cancer Detection to the Physicians of Delaware: Harold S. Rafal, Wilmington.

12:30 a.m.—Luncheon: Members and Guests. Medical Society of Delaware.

2:00 p.m.—Frozen Shoulder: Anthony F. De Palma, Philadelphia.

2:40 p.m.—The Importance of Body Fluid and Electrolytes in Clinical Medicine: Richard A. Neubauer, Wilmington.

3:20 p.m.—Exhibits.

3:50 p.m.—The Abuse of the Barbiturates: Harold W. Lovell, New York.

4:30 p.m.—Legal Aspects of the Barbiturate Problem in Delaware: Hon. Thomas Herlihy, Jr., Wilmington.

6:45 p.m.—Reception and Dinner (Subscription).

9:00 p.m.—Address: Thomas H. Alphin, Washington.

WEDNESDAY, OCT. 14, 1953

9:30 a.m.—American Medical Education Foundation: C. L. Hudiburg, Wilmington.

9:40 a.m.—Diagnosis and Treatment of Spontaneous Subarachnoid Hemorrhage: Philip D. Gordy, Wilmington.

10:20 a.m.—Treatment of Cardiac Emergencies: William Likoff, Philadelphia.

11:00 a.m.—Exhibits.

11:30 a.m.—Presidential Address: To Which of These Shall We Direct Our Attention?: Victor D. Washburn, Wilmington.

12:10 a.m.—Election of President-elect for 1954. (New Castle County.)

12:30 p.m.—Luncheon: Members, Guests and Auxiliary, New Castle County Medical Society.

2:00 p.m.—Orthopedic Care of Poliomyelitis: William T. Green, Boston.

2:40 p.m.—Medical Care Program for the Indigent in Pennsylvania: C. L. Palmer, Harrisburg.

3:20 p.m.—Exhibits.

3:50 p.m.—Administration of a Medical Care Program by the Maryland State Department of Health: Mark V. Ziegler, Baltimore.

4:30 p.m.—Baltimore City Medical Program: J. Wilfrid Davis, Baltimore.

WOMAN'S AUXILIARY, M. S. of D.

TUESDAY, OCT. 13, 1953

Delaware Academy of Medicine

10:00 a.m.—Registration.

10:30 a.m.—Business Session. Guest Speaker: Mrs. Leo. J. Schaefer, President, Woman's Auxiliary to A. M. A.

1:00 p.m.—Luncheon: DuPont Country Club. Guest Speaker: Hon. J. Caleb Boggs.

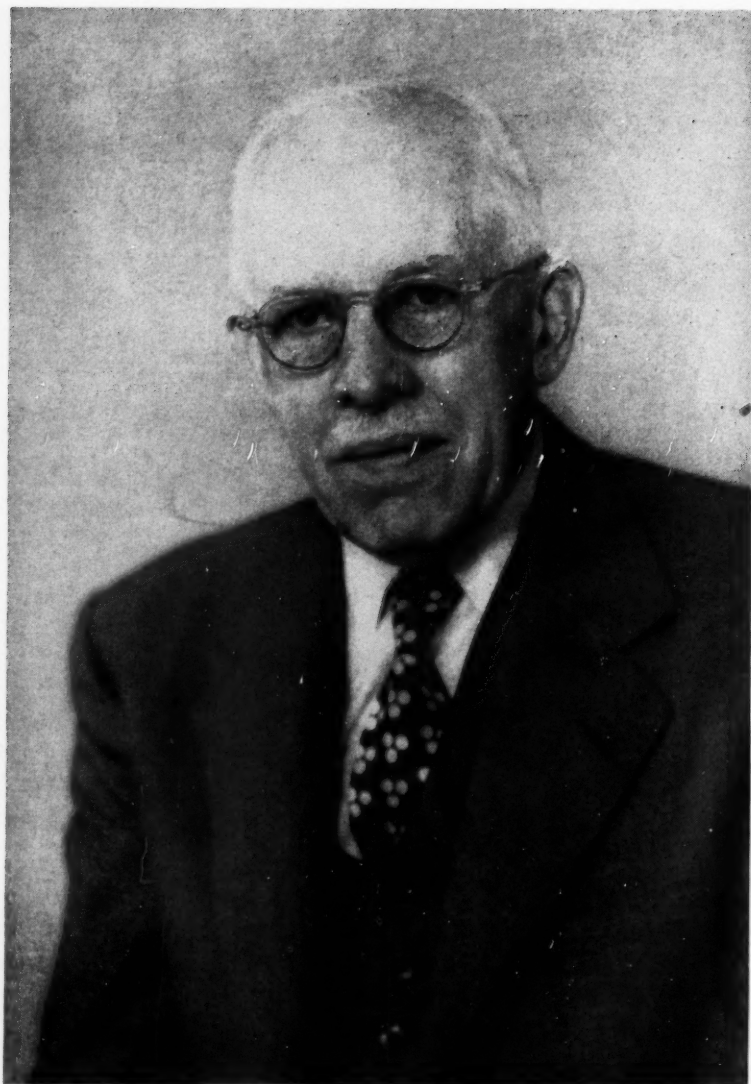
6:45 p.m.—Reception and Dinner (Subscription) Hotel DuPont.

WEDNESDAY, OCT. 14, 1953

Delaware Academy of Medicine

10:30 a.m.—Business Session and Election. Inaugural Address: Mrs. Allen R. Cruchley, Middletown.

12:30 p.m.—Luncheon: Hotel DuPont, New Castle County Medical Society.



VICTOR D. WASHBURN, M. D.
PRESIDENT of the MEDICAL SOCIETY of DELAWARE
1953

DELAWARE STATE MEDICAL JOURNAL

*Issued Monthly Under the Supervision of the Publication Committee
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VOLUME 25
NUMBER 9

SEPTEMBER, 1953

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A REVIEW OF THE CANCER CONTROL PROGRAM IN DELAWARE

GEORGE F. CAMPANA, M.D., M.P.H.,*
Dover, Del.

In January 1947 the State Board of Health approved a bill (which was to be presented to the General Assembly) for the purpose of appropriating monies for the Cancer Control Program in Delaware.

In February 1947 the Cancer Committee of the Medical Society of Delaware seconded the foregoing approval and made the following recommendations:

1. The establishment of a central registry directed toward accurate recording of cancer morbidity and mortality and statistical research.

2. The assistance in the establishment of diagnostic and investigative clinics where needed.

3. To consider the support of existing facilities for the treatment of malignant disease or the establishment of additional facilities.

On April 9, 1947 Governor Bacon approved Senate Bill No. 164. This act appropriated \$25,000 annually for the fiscal years beginning July 1, 1947 and July 1, 1948 to be used for the detection of cancer for research and other purposes related to cancer prevention and control.

On May 25, 1947 the Division of Cancer Control was established by the State Board of Health. An advisory committee was appointed at its first meeting July 10, 1947. It made the following recommendations:

1. That the program of the American Cancer Society be correlated with that of the State Board of Health.

2. That morbidity record collection is a proper activity of the State Board of Health and that a survey be undertaken by the State Board of Health.

3. That uniform blanks should be pre-

pared for the medical examinations relative to cancer.

The aforementioned objectives were attained early in the second year of the cancer program.

In October, 1949 the cancer division office which had formerly been located in Marshallton was moved to its present quarters at Governors Avenue and Division Street, Dover. At this time effort was made to give greater service to the medical practitioner realizing that the successful treatment of cancer rests upon: (1) Early case finding (perhaps in the precancerous stage); (2) Accurate diagnosis; (3) Prompt treatment.

The program was expanded along the following lines: (1) The Mobile Cancer Detection Unit was added; (2) Provision was made for the pathological examination of biopsy specimens for physicians; (3) The medical profession and lay public was provided with up-to-date information regarding cancer.

The Mobile Cancer Detection Unit was secured late in 1950. At that time service on this unit was offered to any woman over 35 years of age. It was presumed that these were healthy examinees. Early in the program emphasis was placed upon the five point examination: (1) skin, (2) buccal cavity, (3) breasts, (4) pelvis, (5) rectum.

Cervical smears according to the Papanicolaou technique were collected and examined. Repeat smears were done when indicated. Provision for pathological examination of biopsy specimens for indigent patients was made in collaboration with the pathologists in the state.

Education of the lay public was accomplished by the procurement of a film entitled "Self-Examination of the Breast"; by distribution of cancer pamphlets, news-releases, radio talks, etc. Information for physicians

*Director Divisions of Preventable Diseases and Cancer Control, Delaware State Board of Health.

and other professional groups was also provided.

On July 1, 1951 the Director resigned to assume new duties as Health Officer of the Sussex County Health Unit in Georgetown. The writer was then assigned to the Cancer Division as Director. The objectives of the program continued to provide full measure of service to both the public and the medical profession. The scope of the physical examination was broadened. The guaiac test for occult blood in the stool was added. A careful check of each case is made by history and examination. An x-ray of the chest is made when indicated. In our Tb. program all x-ray films are examined for tumors, heart conditions, etc. And now with our state-wide rapid x-ray program, which will start September 9, 1953, it is expected that any symptomless cancer of lung, bone, etc. will be picked up and reported to the Cancer Control Division. A thorough physical examination is our goal. The work is done either by practicing physicians in the communities, by the county health officer or the director of the division. Private physicians are encouraged to handle this work as much as possible. It is felt that cancer detection is the prerogative of the private practitioner and it is hoped that every doctor's office will soon be a Cancer Detection Center.

Early in 1953 the age for the cancer detection examinees was changed to include any female 25 years of age and over. This was done because:

1. There is sufficient evidence indicating that pre-preinvasive cancer or carcinoma in situ of the cervix uteri may have a long latent period (estimated by some at 10 years) and that this lesion may be found in relatively young women. If this present concept of carcinoma "in situ" is accepted, then its occurrence in the twenties would not be unusual. The average age of patients with this type of lesion has been found to be ten years younger than that of invasive cervical cancer.

2. Cancer of the breast may also appear early in women; any time after twenty years of age. Hurdon's report from the statistics of mortality for England and Wales indicates that the number of single women who

die of cancer of the breast is greater than the number of married women or widows.

3. Public opinion was most influential in effecting the age change. The younger women requested cancer detection examinations. It is believed that cancer education is to a great extent to be credited for the younger group wishing to be examined. It is interesting to note that over 50% of the cancer detection examinees in our program during the fiscal year 1952 were between 25 and 35 years of age.

4. Conformity with the policies of the Cancer Society of Delaware was desired. The society has established the ages of 25 and above for their examinees.

The scraping technique (of the squamocolumnar junction of cervix uteri, referred to as surface cell-biopsy) using the Ayre wooden spatula instead of the cotton tipped applicator is now followed. Use of the cotton tipped applicator is only infrequently indicated. Obtaining smears with the spatula, according to Ayre, permits diagnosis of cancer of the cervix at an earlier stage than any other known method. He recommends that the material thus obtained be transferred to the glass slide in one single circular motion.

Smears for the Papanicolaou's test have been examined for the medical profession by the State Board of Health since 1952. A kit, consisting of slides, Ayre spatulas, and slide holders suitable for mailing in envelopes, is available to physicians from the State Board of Health Laboratories in Dover or the County Health Officers. The fixing solution which consists of 50% alcohol and ether cannot be furnished for obvious reasons. Before putting slides (which have been in the fixing solution for at least one hour) into cardboard holders for mailing, it is suggested that a drop or two of glycerin be placed upon them and that they be covered with another slide. This will keep cells in a histologically good condition. The slides are firstly screened in our laboratory. Those that are at all questionable are forwarded to a pathologist, who makes the final decisions as to malignancy or non-malignancy. A patient card, completely filled in, should accompany the slides to Dover. Complete

data on card assists pathologist in his final diagnosis.

It is gratifying to report that both the Papanicolaou smear examining and biopsy services have been used to a greater extent during the past fiscal year by private physicians. There were 519 smears and 23 biopsy specimens examined through the Division of Cancer Control.

The Mobile Cancer Detection Unit has operated successfully over the state. However, in order to further serve the people, nine permanent detection centers strategically located in Sussex, Kent, and New Castle Counties, have been established. Four of these are in association with the following hospitals: Beebe, Lewes; Kent General, Dover; Milford Hospital, Milford; and Nanticoke Hospital, Seaford. The remaining five are located at our health units in Middle-

In the spring of 1953 the Cancer Society began to provide volunteer service for our permanent detection centers. These volunteers assist at the centers in various ways. They act as hostesses, explain the services, and calm the examinees before examination. They take histories and prepare the patient for the examination. They assist both nurse and doctor as needed. This assistance on their part enables the Division of Cancer Control to release a clerk for use elsewhere.

A table of statistics on cancer based on reporting by practising physicians is presented, as in former years. It is to be found at the end of this paper. Statistics relative to the work done in the Cancer Detection Program will be discussed briefly. Since detection work began on the Cancer Mobile Unit in August 1950 until July 1, 1953 some 3,333 supposedly asymptomatic women were

TABLE I
Cancer Incidence of the White Population by Age,
Sex, and Site, Delaware 1952

SITE	SEX	ALL AGES	9	10	20	30	40	50	60	70	80	90	Age Unknown
			19	29	39	49	59	69	79	89	99		
All Sites	M	327		3	8	5	36	60	105	62	36	4	8
	F	339	4	3	10	34	67	63	79	55	16		6
Buccal Cavity and Pharynx	M	16					2	1	7	3	3		
	F	5					1		1	2	1		
Digestive System and Peritoneum	M	68			2	4	13	29	12	6		1	1
	F	48		1	1	8	8	14	13	3			
Respiratory System	M	38		1		4	10	16	6	1			
	F	6	1		1	2	2						
Uterus	F	76		5	12	20	14	16	8	1			
Other Genitalia	F	11		1	1	1	2	4	1				
Breast	F	83			11	24	15	14	14	2			3
Genital Organs	M	34			1	1		4	9	13	6		
Urinary System	M	17					2	5	5	3	2		
	F	11					1	5	3	2			
Skin	M	121		3	1	18	19	34	21	16	2	7	
	F	62	1		2	6	11	17	12	8	2	3	
All Other Sites	M	33		3	3	1	6	8	5	4	2	1	
	F	37	3	1	3	6	4	6	10	3	1		

town, Newark, Georgetown, Frankford and Laurel. On July 1, 1953 the Cancer Detection Center at Georgetown, formerly conducted by the Cancer Society, was turned over to the State Board of Health by mutual agreement. All Cancer Detection Centers in the three counties, with the exception of the city of Wilmington, are now under the jurisdiction of the Cancer Control Division of the State Board of Health.

examined at our detection centers. This averages to a little better than 1,100 per year. This number does not include those who had to have repeated smears made. Among the 3,333 examined there were found 10 positive cervical cancers. This is a rate of approximately three per thousand. It compares very closely with similar statistics prepared by Strong Cancer Prevention Clinic, New York City. From 1937 to 1949

TABLE 2
Cancer Incidence by Site, Color and Region
Delaware 1952

SITE	SEX	Delaware		Sussex		Kent		New Castle excluding Wilmington		Wilmington		% of all white cases
		White	Col.	White	Col.	White	Col.	White	Col.	White	Col.	
All Sites	M	327	28	63	1	49	6	72	5	143	16	100%
	F	339	33	67	8	20	7	87	6	165	12	100%
Buccal Cavity and Pharynx	M	16	1	3	0	4	1	4		5		4.9%
	F	5		1				1		3		1.5%
Digestive System & Peritoneum	M	68	15	5	1	12	2	16	3	35	9	20.8%
	F	48	4	3	1	2		16		27	3	14.2%
Respiratory System	M	38	3	2		7		9	1	20	2	11.6%
	F	6	1					1		5	1	1.8%
Uterus	F	76	14	23	4	10	4	18	3	25	3	22.4%
Other Genitalia	F	11	1	3			1	2		6		3.2%
Breast	F	83	8	19	2	3	1	16	1	45	4	24.5%
Genital Organs	M	34	3	17		5	2			12	1	10.4%
Urinary System	M	17	1	1				8	1	8		5.2%
	F	11	1	2			1	3		6		3.2%
Skin	M	121	2	30		20		25		46	2	37.0%
	F	62	2	13		2		20	1	27	1	18.3%
Other Sites	M	33	3	5		1	1	10		17	2	10.1%
	F	37	2	3	1	3		10	1	21		10.9%

TABLE 3
Cancer Incidence by Age, Sex, Color and Region
Delaware 1952

AGE AND SEX		Delaware		Kent		Sussex		New Castle excluding Wilmington		Wilmington	
		White	Col.	White	Col.	White	Col.	White	Col.	White	Colored
ALL AGES	M	327	28	49	6	63	1	72	5	143	16
	F	339	33	20	7	67	8	87	6	165	12
-9	M										
	F	4						2		2	
10-19	M	3								3	
	F	3				1		1		1	
20-29	M	8	1	3		1		2		2	1
	F	10	1	3	1	1		2		4	
30-39	M	5	2		1	1		3		1	1
	F	34	9	1	1	12	4	13	2	8	2
40-49	M	36	5	5	1	8	1	14	2	9	1
	F	67	4	4	1	9		17	1	37	2
50-59	M	60	4	10		11		13	1	26	3
	F	63	5	6	1	10		16		31	4
60-69	M	105	9	9	2	21		24		51	7
	F	79	9	4	2	20	3	15	1	40	3
70-79	M	62	6	13	2	13		9	2	27	2
	F	55	3	1	1	13	1	15	1	26	
80-89	M	36	1	7		6		6		17	1
	F	16						6		10	
90-99	M	4				1		1		2	
	F	2	1						1	2	
AGE UNKNOWN	M	8		2		1				5	
	F	6	1	1		1				4	1

there were examined 6,627 women among whom were found 18 cancers of corpus and cervix uteri combined; the rate being 2.7 per thousand. In the same clinic there were examined a total of 19,499 women from 1940 to 1949. There were found 60 cancers of corpus and cervix uteri combined; the rate being 3.07 per 1,000. To date, our figures are not complete. There are a few instances in which we have been unsuccessful in our follow-ups. For the fiscal year ended we have seven outstanding potentially positive pathological grades IV and V cervical smears. We have not received reports from physicians as yet. It is probable that 50% of these smears are positive for cancer (delayed reports do not mean that physicians are at fault). It may also be stated that all our examinees are apparently well people with no complaints or symptoms, so-called asymptomatic, who usually make their own appointments for examination at our centers. In large institutions like the Strong Cancer Prevention Clinic in New York City many of the examinees are referred by physicians who probably already detected or suspected cancer. Taking these facts into consideration would make our statistics compare even more favorably with those elsewhere.

The number of so-called precancerous conditions found during the fiscal year 1952 to 1953 is difficult to determine. If we accept the definition of a precancerous condition as given by Strachan, "a pathological condition of the tissues which is likely to develop into cancer," then we may assume that 213 precancerous conditions were found in this period among 1,200 persons examined.

All examinees involved were referred to their family physicians. Many pathological conditions were found in the mouth which are the prime concern of the dentists; namely, tooth decay, pyorrhea, improperly fitting dentures, etc. These were referred to their family dentists. Also other conditions were found which were unrelated to cancer. Taking these into account we can state definitely and without hesitation that at least 50% of the examinees were found to need either medical and/or dental care. Similar studies by others show that 75% and more have needed medical and/or dental care.

Educational services are being carried on

as usual. The Cancer Bulletin continues to be mailed to all physicians and dentists in the state. Additional films for professional groups have been purchased. A short refresher course in cancer for physicians has been discussed with the President of the Medical Society of Delaware. He was favorably impressed and will take the matter up with the Medical Society. The Director of the Cancer Division attended such a one week course early in 1953 at the Memorial Hospital in New York City. The lay public is constantly provided with information on cancer, pamphlet distribution, talks to regular and, also, radio audiences plus press releases and personal information by health department personnel, particularly by nurses and doctors. During the week of July 27, 1953 our Cancer Mobile Unit was stationed at the Harrington Fair. A nurse or doctor was in attendance giving out cancer information (both with literature and verbally) from 10 A.M. until 8 P.M. daily.

The new system of record keeping mentioned in the Cancer Report No. 5, September, 1951, Delaware State Medical Journal, is now completely set up. All the information from more than 6,000 old records has been punched on the new cards. Special cabinets for filing these cards have been furnished. Our register is growing to such an extent that already additional files have been found necessary. This new record keeping system greatly facilitates our studies in cancer statistics.

The cancer nursing service is conducted as a part of the generalized nursing program of the Division of Public Health Nursing. Approximately 2,000 nursing visits to cancer patients in the home have been made during the past fiscal year. The nurse is alert to early symptoms of cancer at all times and in all places. She teaches the importance and value of postpartum examinations. She encourages mothers to return to their physicians for a six weeks postpartum examination. She interprets the importance of periodic health examinations. She attends cancer committee meetings and keeps herself abreast of the times in cancer control. She teaches the family beside nursing and care of the cancer patient. She will follow-up cases at the physician's request. She is acquainted

with cancer facilities available in her district and directs cases quickly to same. She knows how to assist with the social and/or economic problems of the family of the cancer patient. The nurse may be considered the first line of defense in our cancer control program.

The writer is convinced that the cancer control program in Delaware has just only begun. The statement in the Annual Report, 1952, of the American Cancer Society that "the Cancer Detection Centers have been highly successful in Delaware in stimulating both general and medical interest" is most encouraging. That the centers have proved their value is attested to by the following:

1. Detection of unknown cancer and precancerous conditions.
2. Detection of other conditions related or unrelated to cancer in skin, thyroid, ovaries, glands, heart, pelvis, genitalia, rectum and buccal cavity.
3. Advancement of the concept of the periodic medical and dental examination (examination by family physician every six months is suggested).
4. The training of public health physicians in these centers.
5. That requests for cancer detection examinations come not only from women but also from men. Our detection centers examination lists are always filled and in several instances there has been a long waiting list.

In conclusion the writer hopes that the services of the Cancer Control Program can be further extended. He is confident that every physician's office is or will be a cancer detection center. He knows that the dental profession is alerted to cancerous conditions of the buccal cavity. With the continued cooperation of physician, dentist, nurse and that of the Cancer Society and other Health organizations, there can be no question as to the successful outcome of the Cancer Control Program in Delaware.

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THE MORTALITY FROM RESPIRATORY CANCER, 1952

CECIL A. MARSHALL, B.S.,*

Dover, Del.

The very encouraging results that we have recently experienced in the reduction of tuberculosis mortality is leading us into believing that we have within our possibilities the opportunity to reduce this disease to a nonentity. Further pursuing of our vigorous case finding, treatment, and medical supervision programs promises to be as fully rewarding as similar efforts during the past few years.

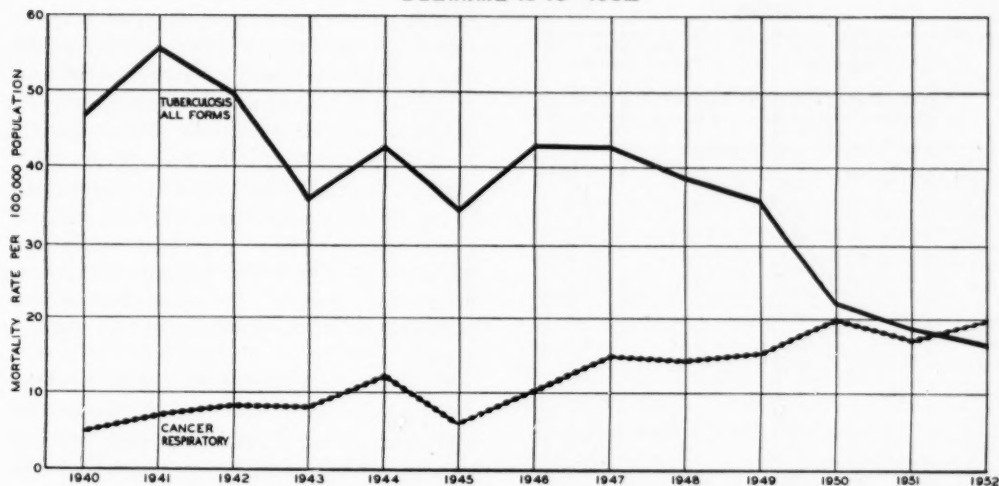
With the rapid decline of tuberculosis mortality there has been the concomitant rise in another morbid condition of the respiratory system to which more and more attention has been diverted during the past few years. The rising toll from respiratory cancer and the importance of the disease in relation to tuberculosis is brought out in the accompanying table. "Comparative Mortality Rates From All Forms of Tuberculosis and Respiratory Cancer." During the past ten years, the mortality in Delaware from respiratory cancer has increased 150%, while in one-half that length of time tuberculosis mortality has declined 50%. The fatality trends from each disease is strikingly brought out in the chart which shows the trend of the mortality from each cause and how in 1952 their curves of trend intercepted. Last year, there were 65 deaths from cancer of the respiratory system, while during the same year there were 55 deaths from all forms of tuberculosis, which number is 50% less than we had for 1949, only four years ago.

From what we know at the present time, it is difficult to account for the recorded increase in the mortality or morbidity from respiratory cancer. We do not know how much of the rise is real. During the period since 1940, the mortality rate from respira-

*Statistician, Delaware State Board of Health.

COMPARATIVE MORTALITY RATES FROM
ALL FORMS OF TUBERCULOSIS AND
RESPIRATORY CANCER

DELAWARE 1940-1952



atory cancer has quadrupled in Delaware. The accompanying table shows a rise from 4.9 deaths per 100,000 population in 1940 to 19.8 for 1952. The rise has been partly due to the improved techniques for diagnosis. Many cases have been detected and reported which, in the past, would have been overlooked. This applies especially to diagnostic x-rays in medical and hospital practice. The increasing number of physicians trained and experienced in the diagnosis of cancer has helped along with the increased use of the bronchoscope and more cytological examinations of lung secretions.

The wide variation in the occurrence of lung cancer has led more to the study of environmental factors which may have contributed to the increase. Some environmental factors have been shown to produce lung cancer while for others the evidence is negligible. It is fairly well established that radioactive materials and some chromates cause lung cancer in experimental animals and in men in certain occupations. The suggestion that air pollution may be a factor is unsupported by any real evidence. The role of other factors, such as coal tar products, excessive tobacco smoking, and specific contaminants is still far from conclusive.

Whatever success can be achieved in the control of respiratory cancer depends mainly upon continuing popular education in the symptoms of the disease and promotion of measures for early detection and treatment. Periodic medical and x-ray examination of every person is the most productive means of accomplishing early recognition.

In light of the ever lowering tuberculosis mortality and morbidity rates in Delaware the routine mass x-ray examination may further lend itself to the detection of cancer of the respiratory tract, with special concentration on ages over thirty five years. It is evident that the mass x-ray is the only adequate means at our disposal for further reduction and eventual eradication of tuberculosis. This task is sizeable and it will not be easy or completed quickly. With our understanding of the nature of the problem and the knowledge available, there can be no doubt as to the success of tuberculosis eradication. With such success as we have now accomplished it is entirely feasible that a more active liaison could be introduced in mass x-rays to further the discovery of respiratory cancer findings as well as those re-

lated to tuberculosis in our future mass x-ray proceedings.

Comparative Mortality Rates From All Forms of Tuberculosis and Respiratory Cancer

	Tuberculosis Mortality		Respiratory Cancer Mortality	
	Number of Deaths	Rate of Mortality Per 100,000 Population	Number of Deaths	Rate of Mortality Per 100,000 Population
1940	126	47.2	13	4.9
1941	152	55.9	19	7.0
1942	138	49.9	23	8.3
1943	102	36.2	23	8.1
1944	123	42.8	35	12.2
1945	102	34.9	17	5.8
1946	128	43.0	31	10.4
1947	130	42.9	45	14.9
1948	118	38.3	44	14.3
1949	113	36.1	48	15.3
1950	71	22.3	64	20.1
1951	61	18.8	56	17.3
1952	55	16.7	65	19.8

NURSING IN THE DELAWARE CHEST X-RAY SURVEY

LILLIAN G. RILEY, R.N., B.S.,*
Dover, Del.

Public health nursing is one of the essential services in a tuberculosis case-finding program. Nurses in every field are looked to by the public for information and guidance in matters pertaining to health. The nurse in her work with patients, families, and community groups teaches the importance of periodic physical examinations and chest x-rays; and advises persons with symptoms suggestive of illness to seek prompt medical attention. She also reports her observations to the patient's physician to assist him in handling the case.

When it was decided that Delaware was to have a state-wide chest x-ray survey, one of the first considerations was how to plan and provide for the necessary nursing services. The needs of patients found through a survey are basically the same as those found in any other way, but the survey finds a relatively large number of patients in a short period of time. Therefore, it is necessary to plan for an increased amount of nursing time

to be available for tuberculosis service during and following the survey.

In addition to providing public health nursing services to an increased number of patients and their families in chest clinics and nursing supervision in the home, public health nurses are directly in charge of the retake center which is a part of survey operation. If 200,000 Delawareans are x-rayed, as is expected, we can estimate from data of similarly conducted community-wide chest x-ray surveys that have been done in other areas in the United States, there will be a total of 5,479 persons recalled for a 14x17 chest x-ray. These 14x17 x-rays will be taken at one of three retake centers. The retake centers will be located in Wilmington, Dover, and Georgetown.

The taking of the 14x17 x-rays and the nursing interview in the retake center are the beginning of the follow-up process, and the impression made upon the person who comes in for these purposes may decide whether he will follow later recommendations. Persons who are recalled may require considerable explanation of the reasons for having a second x-ray and the need for further diagnostic study if it is required. Most of the people recalled will have had no reason to believe they might be ill, and their reaction may be disbelief or alarm. The content of the interview and the counseling at this point must, of course, be adapted to the individual needs. One of the primary purposes of the interview is to make tentative plans for further diagnostic study if it is needed and to encourage continuation through the total diagnostic process until a diagnosis is made. In each interview the nurse (1) explains the reasons for taking the second film; (2) gives information about how and when the report on the 14x17 films will be received; (3) explains that x-ray interpretation alone does not provide a diagnosis of tuberculosis; and (4) gives assurance of help in planning for care if the need arises.

The other purpose of the nursing interview in the retake center is to obtain certain information to be used in follow-up. On the epidemiological form, the nurse records such information as the person's present and past occupation, any history of recent illness, or

*Consultant, State Tb. Nursing, Delaware State Board of Health.

of tuberculosis or contact with it, and other significant information which will help those responsible for subsequent care. For example, it is important for the physician to know that a person has had pleurisy with effusion; and that the field nurse know that a patient who is found to have active tuberculosis has a baby at home who could be endangered by each additional day of exposure. At this time, the nurse also obtains the name of the physician to whom the report of the 14x17 x-ray is to be sent, or of the clinic if the person does not have a private physician.

During the same period that the retake center operates, the State Board of Health nurses will still need to serve patients with other illnesses, staff the regularly held clinics and give health supervision to mothers, babies, crippled children, and others in need of their help. In order to meet this increased demand for nursing service the Division of Public Health Nursing has planned temporary adjustments in their program, and revised policies which govern the selection of tuberculosis cases for clinic and home nursing supervision. The Wilmington Visting Nurse Association and the Wilmington Board of Health are co-operating by lending nursing assistance during the time the retake center will be in operation.

The Nursing Committee also has accepted the responsibility of recruiting volunteer hostesses for the retake centers. They will assist in the orientation and training of these hostesses for their responsibilities during the survey. The Delaware League for Nursing and the Delaware Anti-Tuberculosis Society sponsored a two-day institute on tuberculosis nursing on July 14th and 15th. Nurses representing agencies, who attended this meeting were delegated the responsibility of carrying out an educational program on tuberculosis for nurses who were unable to attend the institute from their own agencies.

Nurses will also participate in the survey by working, along with other citizens of the state, in the general survey organization. Professionally, they take part in the survey organization through the nursing committee. On May 25th the State Nursing Committee was organized and made plans to take the necessary steps to inform all nurses in Dela-

ware of the survey and to prepare them to instruct other groups and individuals about tuberculosis and the value of having a chest x-ray. An endeavor is being made to have all nurses in all fields of employment aware of their responsibility in the conduct of the chest x-ray survey in Delaware.

TYPHOID FEVER AND RAW MILK

W. H. BANDY, M.D., M.P.H.,*

Georgetown, Del.

Typhoid fever, the scourge of the past, is still of interest to the practicing physician because: (1) while the disease is not common it still occurs sporadically; (2) its early diagnosis is usually not apparent; (3) treatment is now specific. The disease is of interest to the public health physician because: (1) the original source is most frequently from a chronic carrier; (2) a chain of transmission is not always apparent; (3) the supervision by the health department of the known typhoid carriers is a necessity.

The following report illustrates these points, plus the hazard of using raw milk and dairy products. Since November, 1950 it has been required that all commercial milk sold in Delaware be pasteurized. However, there are still many people who buy or accept raw milk from neighbors. These cases are brought to the attention of the Health Department by incidents such as the two cases of Typhoid fever that occurred in a town in Sussex County in April, 1953.

CASE HISTORIES

Case No. 1. Five year old white pre-school child was admitted to the Nanticoke Memorial Hospital, March 31, 1953 with a history of gradual onset of fever, general malaise, anorexia, dry cough and headache for four days prior to admission. She had been treated with A.S.A. and fluids on day of onset with little improvement or change in the clinical picture: urinalysis March 29, 1953 was reported negative. The patient was seen again March 31, 1953. The clinical picture was unchanged and child was hospitalized for further study and treatment.

Past history was non-contributory. Patient was an 8 pound 13½ ounce full-term baby born spontaneously. Growth and de-

*Deputy State Health Officer, Sussex County Health Unit, Delaware State Board of Health.

velopment seemed normal. Dietary and vitamin intake had been adequate. No immunizations had been done. Childhood diseases included measles at age 3 years, mumps at age 4 years, and chicken pox at age 4 years, 10 months. Other past illnesses included pinworms in January, 1953, and whooping cough in February, 1953.

Physical examination on admission revealed a well developed and well nourished five year old white female child who did not appear acutely ill. T: 103 (R) P: 150 R: 32. The physical examination was negative except for "slightly enlarged tonsils."

The report of a chest x-ray taken March 31, 1953 was: "the lower right lung markings are somewhat prominent and there is slight mottling of the right lower lung, consistent with a peribronchitis or a minimal pneumonitis without gross consolidation." Laboratory work on the day of admission revealed: Hb. 11 grams; RBC: 3,530,000; WBC: 8,500 with 68% neutrophils, 28% lymphocytes and 4% monocytes. Urinalysis: negative; EKG March 31, 1953 revealed "a sinus tachycardia with right-sided hypertrophy, marked-?". April 1, 1953 with this information at hand a working diagnosis of pneumonitis with right-sided cardiac hypertrophy was made. Terramycin 250 mgm. was given orally every 6 hours and digitalization as a prophylactic measure was started.

The course in hospital remained essentially unchanged. Temperature (R) ranged from 97 degrees to 104 degrees F. and was septic in type. The pulse gradually slowed from 150 to 110-116 on digitalization. Respirations varied from 32 to 20 and the dry cough persisted. B.M. were regular 1 x day and were slightly loose in character.

On April 3, 1953 sedimentation rate was 27 mm in 1 hour, and blood was drawn for agglutinations for typhoid, paratyphoid, and undulant fever. These were reported April 6, 1953 as negative for undulant fever and paratyphoid fever. The widal was positive in dilutions of 1-640.

Chloromycetin palmitate 1250 mgm. was given stat and 250 mgm. every 6 hours by mouth. On this regime the temperature fell by lysis, convalescence was rapid and un-

eventful and patient was discharged April 12, 1953.

Stool specimens have remained negative after discharge.

Case No. 2. Mother of 5 year old child was admitted to the Nanticoke Memorial Hospital April 4, 1953 with chief complaint of "fever and feeling rotten." The present illness began 4 days before admission with gradual onset of fever, malaise, headache, and "a sore nose." She was seen by her family physician who gave her injections of penicillin daily for 3 days because of a small abscess in nose. The patient showed little or no improvement and was referred by her family physician to the hospital for further study.

Physical examination on admission revealed a well developed and well nourished, acutely ill, 26 year old white female. T: 101.4; P: 116; R: 20; B.P. 106/68. Head, E.E.N.T. appeared normal. The neck was supple; heart and lungs normal to auscultation and percussion. The abdomen was soft, non-tender, and there were no masses or palpable organs. Neurological examination was not remarkable.

Routine C.B.C. April 4, 1953 was reported: Hb. 13 grams; RBC 4,350,000; WBC: 4,800 with 66% neutrophils, 26% lymphocytes and 8% monocytes. Urinalysis (cath.) was reported as showing two-plus albumen but was otherwise negative. Blood Wassermann and Kahn were negative.

Chest x-ray April 4, 1953 was reported: "The heart is within normal limits in size. The bronchovascular markings are increased in each lung field; this is more marked in right base. The peripheral lung fields are clear. The diaphragm and bony thorax are normal. The findings are consistent with acute peribronchitis."

The patient was started on aureomycin 500 mgm. stat and 250 mgm. every 6 hours. Blood was drawn for agglutinations and culture on April 9, 1953. The agglutinations were reported: Widal—negative; undulant fever—negative; paratyphoid A & B negative. On April 10, 1953 the blood culture was reported as positive for typhoid bacilli.

The hospital course was stormy with almost continual nausea and vomiting. On April 6, 1953 when her daughter's agglutina-

tions were reported positive she was placed on chloromycetin 2500 mgm stat and 750 mgm every 6 hours by mouth. Her temperature which had been swinging from 97 degrees to 104 degrees in a septic type curve fell by lysis, and convalescence from that point on was rapid and uneventful. The patient was discharged April 12, 1953.

Stool specimen collected April 13, 1953 was reported positive, but subsequent specimens have all been negative.

EPIDEMIOLOGICAL INVESTIGATION

Report of these 2 cases of typhoid fever reached the Health Unit April 13, 1953. Investigation revealed that there were 7 members of the household: father, mother (patient), son age 7, daughter (patient), brother of father age 28, and the two maternal grandparents. Other contacts were Mr. A, white, male, 79 years, who had no history of typhoid and his wife, Mrs. A, who gave a history of typhoid 48 years ago. (This family sold raw milk, cream and butter to the family with typhoid and employed Mr. B. to milk the cows).

Water and sewage were public systems. Pasteurized milk was obtained from an approved dairy and raw milk, cream, and butter had been purchased from Mrs. A. Ice cream was obtained from an approved source. Ice was made in a refrigerator at home. Seafoods, vegetables, and fruits were purchased from a supermarket in town. The house was screened and there was no evidence of flies or fly breeding on the premises. The only recent trip away from home was one made to a Cub Scout Camp from which drinking water was obtained from a shallow well.

Recent regular bacteriological examination of the public water system had been negative. An examination done at time of the investigation was also negative. The sewage disposal system was considered to be satisfactory. The plumbing in the home showed no deficiencies or evidence of cross connections. Milk from the approved dairy had been bacteriologically safe both on recent analyses and at the time of investigation. The local drug store's refrigeration facilities were adequate and there could be found no evidence of contamination of food products at this source. It was considered

unlikely that food products from the supermarkets were involved since no other cases had occurred in the area served by this store.

The probable sources of infection at this point in the investigation were: (1) raw milk and dairy products from Mrs. A; and (2) Cub Scout Camp site well. A sample of water from the well at the camp site was reported by the Board of Health Laboratory to be safe.

Stool specimens were taken from all members of the household including Mr. and Mrs. A and their milker. Cultures were negative except that of Mrs. A which revealed typhoid bacilli. This led us to suspect that Mrs. A was the source of the typhoid outbreak. Epidemiological studies pointed to the possible transmission of the disease by raw milk and dairy products from Mrs. A to the two persons affected since this was the only method of contact with the carrier. Mrs. A bottled the milk and cream and churned and molded the butter.

DISCUSSION

The onset of the two cases occurred within a 5 day period. Since the incubation period of typhoid fever has a range of 3-38 days, usually average 7 to 14 days, it seems reasonable to assume that the two cases were primary cases, possibly coming from a common source.

The routine epidemiological investigations along with the positive stool specimen from Mrs. A was enough to bring to light the probable source of the two cases and their transmission by raw milk and dairy products. The difficult part for the local public health personnel was dealing with Mrs. A who was unwilling to accept the facts: (1) that she was a typhoid carrier; and (2) that she was illegally selling raw milk. She was finally able to understand that she had to stop selling raw milk and dairy products but, she continued to bake cakes which she gave to her neighbors, who had to be contacted and warned of the potential danger of these gifts of food.

The problem of dealing with recalcitrant chronic carriers is a difficult one, and as yet has not been solved to everyone's satisfaction. The measures taken in some states appear drastic but even these have not been entirely effective. Chloromycetin, which

seemed to offer so much promise at first, has not, in its present form, lived up to its early expectations in the treatment of chronic carriers.¹

Nor is the recalcitrant carrier our total problem. A recent survey in New York State showed that only 16% of the entire total number of carriers were known carriers under the supervision of the Board of Health.²

The problem of typhoid fever has now become one of sporadic cases and focal outbreaks. Control has become increasingly a matter of prompt diagnosis and isolation of the patient for the protection of the contacts and the tracing of the source of infection. The discovery and supervision of carriers has become an important function of the health department.

The long range view of typhoid fever is bright. The ultimate reservoir of infection is the number of carriers in the population. Their number is being decreased through deaths more rapidly than they are being replaced by new carriers arising from cases. The balance is against the survival of the disease.

SUMMARY

1. Two cases of typhoid fever probably transmitted by raw milk and dairy products are presented.
2. The source of these two cases and the method of transmission was brought to light by routine epidemiological investigation and laboratory studies.

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INFECTIOUS HEPATITIS IN A RURAL COMMUNITY

Report of a Mild Outbreak

EDWARD F. GLIWA, M.D., M.P.H.,*
Dover, Del.

This outbreak of infectious hepatitis occurred in a small rural community with most of the cases occurring in the local grade school. There is no common meeting place in the community except the school and the church. There is one small community store, no theaters or no public eating places. The school is a small modern building which ac-

commodates approximately one hundred children ranging in ages from six to twelve years. Although the first six grades are represented, the children are divided into one and one-half grades per room since only four rooms are available. Although some contact exists between students of various rooms, the school principal and nurse both agreed that there is indeed very little. Intra-room contact, however, is great.

The outbreak consisted of 8 known possible cases of infectious hepatitis (IH) occurring between November 5, 1952 through January 7, 1953. Of the eight cases, seven had evidence of jaundice, whereas one case with mild symptoms did not show any evidence of jaundice. This outbreak was limited to children attending one school and their families, with the exception of one case which occurred in a student attending a high school in another community, and as such may not be related to this outbreak at all, although subclinical cases in her family group could be an explanation for this epidemic since younger children in this family attend the local grade school.

It can be noted in Table I that of the eight cases three were secondary family cases occurring at least twenty days after the original case in the same family. Five different families were represented in this epidemic in which there were a total of twenty-six members. Hence, there were a total of eighteen home contacts, eight of whom were adults and the remainder were children under fifteen years of age. Of the eight cases, five occurred in the local school with three cases occurring in the same room.

Investigation of this outbreak did not reveal any common source of infection for the early cases which developed. A thorough investigation of the sanitary facilities in the school revealed that the water supply was obtained from a drilled well on the school premises which was adequately protected from any source of pollution. This was further confirmed by a bacteriological examination of the water. However, there were two drinking fountains located at each end of the corridor in the school and one fountain located on the grounds outside. Each fountain was equipped with a mouth guard which may have been a possible source of contamination.

*Deputy State Health Officer, New Castle County, Delaware State Board of Health.

There were adequate toilets and wash basins for the children and faculty. Sewage disposal was of the individual type and located about 175 feet from the well. There was no cafeteria. All personnel brought their own lunch and purchased milk at the school. Milk was supplied in individual one-half pint containers and kept in a good refrigerator.

In the homes where cases had occurred, all water supplies were found to be free from contamination. All cases and contacts attended religious services at two places. There had been no church suppers or other community functions at which food had been served in the past several months. There was no indication that the spread had been caused by this means.

Since this epidemic was one of person-to-person spread and not caused by a common vehicle, as is demonstrated by the onset dates of the disease, the following steps were taken to curb the epidemic. The guards from the water fountains were ordered removed to prevent any possibility of contamination. A closely directed handwashing campaign was instituted for the students of the school. Since the epidemic was mainly confined to family contacts when it was brought to the attention of the Health Department it was felt that gamma globulin should only be administered to family contacts and not to the entire school population.

EPIDEMIOLOGY

Infectious hepatitis has a world wide distribution and due to the lack of specific diagnostic tests its prevalence is not well known. Many cases pass unrecognized since some patients are preicteric or entirely unicteric throughout the entire course of the disease

and only present mild gastro-intestinal symptoms. These cases can be detected during an epidemic but otherwise are usually diagnosed as G-I upsets.

The disease is most prevalent in the autumn and winter months. It is mainly a disease of children and young adults although all ages are susceptible. People of the older age groups appear to be less susceptible to this disease, as was shown by the incidence among our American troops in World War II. Men over thirty-three years of age had only one-third the incidence found in younger men.¹ Institutional, military and family outbreaks occur quite frequently. In families, the usual pattern is that one member develops the disease then, in about three or four weeks, other members in the family begin to develop symptoms of the disease. This type of spread may also occur in institutional or military epidemics but commonly the outbreak may be of an explosive nature.

It has been well established that infectious hepatitis spreads by at least two media: feces, and blood or blood products. Natural transmission with feces is possible directly through person to person contact¹ or indirectly by contaminated water,² food,³ milk,⁴ and possibly through mechanical transfer by flies.⁵

Its unnatural transmission as well as that of serum hepatitis takes place through the use of contaminated blood or blood products, and by the use of inadequately sterilized syringes and needles.⁶ It is important to remember that the hepatitis virus is very resistant to the common chemical antiseptics and that heat sterilization is necessary to destroy this agent.

TABLE I.
Cases listed as to dates of onset, school and family distribution.

Case #	Family	Age	Sex	Onset Date	School	Room	Jaundice
1	A	14	F	Nov. 5-52	B	—	Yes
2	B	11	M	Nov. 5-52	A	3	Yes
3	C	10	M	Nov. 18-52	A	3	Yes
4*	B	40	F	Nov. 25-52	—	—	Yes
5	D	9	F	Dec. 3-52	A	3	Yes
6	E	6	M	Dec. 8-52	A	1	No
7*	E	8	F	Jan. 7-53	A	2	Yes
8*	E	40	F	Jan. 7-53	—	—	Yes

* Secondary family cases

PREVENTION AND CONTROL

Since only two methods of transmission of this disease are known, control measures must be directed towards the interruption of the intestinal-oral route of transmission and of the parenteral route of transmission. Attention should be directed at general measures such as personal cleanliness, home hygiene and community sanitation. Recognized clinical cases should be placed under typhoid-type isolation with special attention directed toward safe fecal disposal. The risk of parenteral transmission can be reduced by proper heat sterilization of syringes, needles, and stylets which have been in contact with blood or blood derivatives.

It was first shown in 1945⁷ and later corroborated by others^{8,9} that normal human gamma globulin confers temporary passive protection if given during the incubation period up to within six days before the onset of the disease. The dosage which the committee on the distribution of gamma globulin in Delaware recommended for use as prophylaxis is 0.02 c.c. per pound of body weight, with a maximum of 4 c.c. to any one individual.

It is recommended for family or institutional contacts. Although gamma globulin is effective in protecting against infectious hepatitis, recent studies reveal that it does not appear to confer any passive protection against homologous serum hepatitis.¹⁰

SUMMARY

A mild epidemic of infectious hepatitis in a rural community is reported with a majority of cases occurring in the local school. This outbreak was propagated through person to person spread. No source of infection was demonstrated for the initial cases although it is suspected that a mild subclinical case in the school may have been the original source of contact.

The epidemiology of this disease has been discussed as well as the control and preventive measures which are known to be effective against this disease.

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IMMUNIZATION OF DELAWARE'S INFANTS

JACK SABLOFF, M.D.,*

Dover, Del.

The State Board of Health initiated in April, 1951 the procedure of mailing a letter on immunization to the parents of all newborns. This letter is sent when the baby is approaching his fourth month. It stresses protection at an early age and outlines a recommended course of primary and booster immunizations. The parents are urged to take their child to their private physician or to one of the listed well child conferences conducted by the State Board of Health.

Enclosed with the letter is a set of immunization certificate forms—a copy for the parents, one for the physician, and one to be completed and returned by the physician or clinic to the State Board of Health. The parents are requested in the letter to take these certificate forms to their physician or to the well child conference. A letter explaining the certificate forms and the private physician's part in completing them and mailing a copy to the State Board of Health was also sent in April, 1951 to every Delaware physician. The full cooperation of all practicing physicians was requested to effect the immunization of as nearly 100% of all babies as possible. The State Board of Health hoped its letter would tend to stimulate immunization. It also thought the return of its copy of the certificate form would enable it to derive an estimate of the extent of immunization being carried on.

The return of the certificate forms to the

*Director, Maternal & Child Health Division, Delaware State Board of Health.

State Board of Health was disappointing. The number received was so small that it was obvious it did not reflect the extent of immunization in Delaware. The State Board of Health therefore decided to conduct a special survey to ascertain the status of immunization among Delaware's newborn children. The period January 1, 1952 through March 31, 1952 was chosen. A careful check of vital statistics files revealed 7 reported deaths in this group and these were excluded. Infants whose mothers resided in neighboring states but who were delivered in Delaware were also excluded. This left 1882 births during this period, and 118 births in April, 1952 were added to round the survey number to 2000.

PROCEDURE FOLLOWED

A card was set up for each of the 2000 children included in the survey study, and information received on each child was listed upon it. The immunization certificate returns were first checked, and all certificates on children included in the survey were listed. On January 30, 1953 a letter was sent to the parents of all children for whom an immunization certificate had not been received. This letter was sent first-class so that it would be returned if the family were not located. Enclosed with the letter was a return-addressed, stamped postal card listing the child's name and birth certificate number. The purpose of the survey was explained in the letter and instructions given for completing the postal card. The parents were requested to check whether or not the child had been immunized, the type of immunization given and to write in the number of injections given and the name of the physician or clinic who performed the immunizations.

The information on a small number of the returned postal cards was indefinite or questionable. A letter containing a check form and a return-addressed, postage free envelope was sent to the physician or well child conference on these returns so that accurate information might be secured.

A second follow-up letter was sent on May 1, 1953 to all parents who had failed to return their postal cards, with the exception of those where the letters had been returned as not located. Enclosed was a mimeographed

form similar to the postal card, and a return-addressed, postage free envelope. The second letters returned as "not located" were added to the *not located count*.

In some instances an immunization certificate form was received after the letter with the postal card had been mailed. These were included in the certificate group and not counted in the postal card group. In a few cases a postal card reply was received after the second letter had been sent. These were included in the postal card group and dropped from the second letter count. No reply of any sort received after June 30, 1953 was included.

The 2000 children included in the survey were separated on a county-of-residence basis and further divided into white and non-white groups.

Returns in which the type of immunization given was obscure or questionable were listed as *undetermined*. Those where the type of immunization was clear, but which were either noted as being incomplete or where the number of injections given would so designate, were listed as *incomplete*. Nineteen replies received from out of state where the immunization had been performed by a Delaware physician, probably prior to moving from Delaware, were listed with the Delaware group. The other 36 *out-of-state* returns were listed as such. All diphtheria, pertussis, and tetanus immunizations, in which triple vaccine was not used, were included among *other than triple vaccine*.

The final tabulation was made on the basis of information secured from the immunization certificates, the postal card returns (with corrections obtained from physicians or clinics on questionable replies), and the returns on the second follow-up letters. The questionable returns from the second letters were not followed by questionnaires to physicians, but were listed as *undetermined*.

RESPONSE TO SURVEY LETTERS

The responses to the various letters for each county are shown in the first part of Tables I, II and III. The survey results for the entire state are shown in the first part of Table IV.

TABLE I
IMMUNIZATION STUDY
Jan. 1 - Mar. 31, 1952

NEW CASTLE COUNTY
PART 1

	White		Non-White		Combined	
	Number	Percent	Number	Percent	Number	Percent
1. Number in follow-up study	1179	84.8%	210	15.2%	1389	100%
2. Certificates received	101		37		138	
Well Child Conferences	51		36		87	
Private Physicians (16)	50		1		51	
3. 1st letters mailed	1078		173		1251	
4. Postal cards returned	528	49.0% (1)	36	20.8% (1)	564	45.1% (1)
5. Check-up Forms to Physicians	81		12		93	
6. Check-up Forms returned	71	87.7% (2)	6	50.0% (2)	77	82.8% (2)
7. 2nd letters mailed	539		147		686	
8. Mimeo'd forms returned	221	41.0% (3)	31	21.1% (3)	252	36.7% (3)
9. Returns—postal cards and mimeo'd forms (81 physicians)	749	69.5% (1)	67	38.7% (1)	816	65.2% (1)
10. Not located—1st and 2nd letters	67	6.2% (1)	16	9.2% (1)	83	6.6% (1)
11. No reply—to both 1st and 2nd letters	262	24.3% (1)	90	52.0% (1)	352	28.1% (1)
		(1) — based on numbers in line 3				
		(2) — based on numbers in line 5				
		(3) — based on numbers in line 7				

INFORMATION FROM CERTIFICATES AND ALL OTHER RETURNS

PART 2

Certificate, Postal Cards and Mimeo'd Returns	850	82.1% (4)	104	49.5% (4)	954	68.6% (4)
No immunization	82	9.6%	17	16.3%	99	10.4%
Triple Vaccine (DPT)	659	77.5%	69	66.3%	728	76.3%
Well Child Conferences	72	8.5%	59	56.7%	131	13.7%
Private Physicians	587	69.0%	10	9.6%	597	62.6%
Other than Triple Vaccine	18	2.1%	1	1.0%	19	2.0%
Smallpox Vaccination	239	28.1%	43	41.3%	282	29.5%
Well Child Conferences	31	3.6%	36	34.6%	67	7.0%
Private Physicians	208	24.5%	7	6.7%	215	22.5%
Incomplete	35	4.1%	2	1.9%	37	3.9%
Well Child Conferences	6	0.7%	2	1.9%	8	0.8%
Private Physicians	29	3.4%	0	0.0%	29	3.1%
Out-of-State Immunizations	31	3.6%	1	1.0%	32	3.4%
Triple Vaccine	28		1		29	
Other than Triple Vaccine	3		0		3	
Smallpox Vaccination	19		1		20	
Undetermined	19	2.2%	9	8.7%	28	2.9%
Deceased	6	0.7%	5	4.8%	11	1.2%

(4) based on line 1, total number in follow-up study

Returns on letters sent. The percentage of returns of the postal cards and the second follow-up letters was considerably better from the white than the non-white groups in all three counties. The best general response to the postal cards came from Kent County, mainly because of the higher response from the non-white group in this county than from the non-whites in the other counties. The poorest general response came from Sussex County with the response from the white group much lower than that from the white groups in New Castle and Kent Counties.

The response to the second follow-up letter was also better from the white than the non-

white groups, though not to so great a degree as to the postal cards. Again Kent County had the best general response, Sussex County was next with a greatly increased response from both the white and non-white groups.

The combined response from both postal cards and second follow-up letters was best from Kent County. Statewide, the response from the white group was 70%, from the non-white 43%, for a combined response of 65.4%.

The physician response to the check-up questionnaires on the questionable postal card return was very good, almost all forms having been returned.

TABLE II
IMMUNIZATION STUDY
Jan. 1 - Mar. 31, 1952

KENT COUNTY
PART 1

	White		Non-White		Combined	
	Number	Percent	Number	Percent	Number	Percent
1. Number in follow-up study	228	76.5%	70	23.5%	298	100.0%
2. Certificates received	23		19		42	
Well Child Conferences	13		19		32	
Private Physicians ("6)	10		0		10	
3. 1st letters mailed	205		51		256	
4. Postal cards returned	101	49.3% (1)	17	33.3% (1)	118	46.1% (1)
5. Check-up Forms to Physicians	10		5		15	
6. Check-up Forms returned	9	90.0% (2)	5	100.0% (2)	14	93.3% (2)
7. 2nd letters mailed	107		38		145	
8. Mimeo'd forms returned	55	51.4% (3)	10	26.3% (3)	65	44.8% (3)
9. Returns—postal cards and mimeo'd forms (17 physicians)	156	76.1% (1)	27	52.9% (1)	183	71.1% (1)
10. Not located—1st and 2nd letters	15	7.3% (1)	3	5.9% (1)	18	7.0% (1)
11. No reply—to both 1st and 2nd letters	34	16.6% (1)	21	41.2% (1)	55	21.5% (1)

(1) — based on numbers in line 3

(2) — based on numbers in line 5

(3) — based on numbers in line 7

INFORMATION FROM CERTIFICATES AND ALL OTHER RETURNS

PART 2

Certificate, Postal Cards and Mimeo'd Returns	179	78.5% (4)	46	65.7% (4)	225	75.5% (4)
No immunization	44	24.6%	5	10.9%	49	21.8%
Triple Vaccine (DPT)	109	60.9%	37	80.4%	146	64.9%
Well Child Conferences	23	12.8%	29	63.0%	52	23.1%
Private Physicians	86	48.1%	8	17.4%	94	41.8%
Other than Triple Vaccine	7	3.9%	0	0.0%	7	3.1%
Smallpox Vaccination	37	20.7%	6	13.0%	43	19.1%
Well Child Conferences	9	5.0%	4	8.7%	13	5.8%
Private Physicians	28	15.7%	2	4.3%	30	13.3%
Incomplete	10	5.6%	2	4.3%	12	5.3%
Well Child Conferences	2	1.1%	1	2.1%	3	1.3%
Private Physicians	8	4.5%	1	2.1%	9	4.0%
Out-of-State Immunizations	3	1.7%	0	0.0%	3	1.3%
Triple Vaccine	1		0		1	
Other than Triple Vaccine	2		0		2	
Smallpox Vaccination	2		0		2	
Undetermined	3	1.7%	1	2.1%	4	1.8%
Deceased	3	1.7%	1	2.1%	4	1.8%

(4) based on line 1, total number in follow-up study

Immunization Certificates. A glance at the breakdown of the immunization certificates shows the poor response and the fact that while 119 physicians were listed on the postal card and second letter replies only 29 had sent in one or more immunization certificates—in other words, only 1 out of 4.

Combined information from certificates and other returns. When the certificate returns were added to the postal card and second letter replies, the counties tended more nearly to balance. Kent County still had the highest return with New Castle County next and Sussex County last.

Comments. The 65.4% return on the postal card and second letters is considered a good response. These replies, plus the certificates, afforded information on 1383 children, or 69.2% (72.6%) of the white group, 54% of the non-white group) of the number in the survey. This is considered a large enough group from which to draw valid conclusions.

The survey letters aroused some additional interest in immunization. A number of parents took pains to explain why their child had not been immunized to date. Others indicated that they plan to take their child to a physician or clinic. The 55 replies from

TABLE III
IMMUNIZATION STUDY
Jan. 1 - Mar. 31, 1952

SUSSEX COUNTY
PART 1

	White		Non-White		Combined	
	Number	Percent	Number	Percent	Number	Percent
1. Number in follow-up study	221	70.6%	92	29.4%	313	100%
2. Certificates received	22		16		38	
Well Child Conferences	3		15		18	
Private Physicians (7)	19		1		20	
3. 1st letters mailed	199		76		275	
4. Postal cards returned	72	36.2% (1)	16	21.1% (1)	88	32.0% (1)
5. Check-up Forms to Physicians	10		4		14	
6. Check-up Forms returned	10	100% (2)	2	50.0% (2)	12	85.7% (2)
7. 2nd letters mailed	125		56		181	
8. Mimeo'd forms returned	59	47.2% (3)	19	33.9% (3)	78	43.1% (3)
9. Returns—postal cards and mimeo'd forms (21 physicians)	131	65.8% (1)	35	46.1% (1)	166	60.4% (1)
10. Not located—1st and 2nd letters	8	4.0% (1)	4	5.3% (1)	12	4.4% (1)
11. No reply—to both 1st and 2nd letters	60	30.2% (1)	37	48.7% (1)	97	35.3% (1)

(1) — based on numbers in line 3

(2) — based on numbers in line 5

(3) — based on numbers in line 7

INFORMATION FROM CERTIFICATES AND ALL OTHER RETURNS

PART 2

Certificate, Postal Cards and Mimeo'd Returns	153	69.2% (4)	51	55.4% (4)	204	65.2% (4)
No immunization	48	31.4%	19	37.3%	67	32.8%
Triple Vaccine (DPT)	90	58.8%	26	51.0%	116	56.9%
Well Child Conferences	10	6.5%	24	47.1%	34	16.7%
Private Physicians	80	52.3%	2	3.9%	82	40.2%
Other than Triple Vaccine	7	4.6%	1	2.0%	8	3.9%
Smallpox Vaccination	17	11.1%	4	7.8%	21	10.3%
Well Child Conferences	3	2.0%	2	3.9%	5	2.5%
Private Physicians	14	9.1%	2	3.9%	16	7.8%
Incomplete	7	4.6%	2	3.9%	9	4.4%
Well Child Conferences	3	2.0%	2	3.9%	5	2.5%
Private Physicians	4	2.6%	0	0.0%	4	1.9%
Out-of-State Immunizations	0	0.0%	1	2.0%	1	0.5%
Triple Vaccine	0		1		1	
Other than Triple Vaccine	0		0		0	
Smallpox Vaccination	0		0		0	
Undetermined	1	0.7%	2	3.9%	3	1.5%
Deceased	0		0		0	0.0%

(4) based on line 1, total number in follow-up study

out-of-state also indicated the parents' interest and concern in immunization. These replies came from 22 different states and one territory. Pennsylvania, New Jersey, Maryland, New York, Connecticut, Massachusetts, New Hampshire, Virginia, West Virginia, North Carolina, Georgia, Florida, Louisiana, Ohio, Kentucky, Missouri, Michigan, Wisconsin, Oklahoma, Texas, Colorado, California, and Alaska. These out-of-state replies and the number of letters returned as "not located" indicate the constant movement of population from one locality to another.

ANALYSIS OF SURVEY INFORMATION

The information obtained from the certificate and replies for each county is shown in the second part of Tables I, II, and III. The information obtained for the entire state is shown in the second part of Table IV.

Ratio of white to non-white in survey group. The ratio of white and non-white children in the survey varied considerably by county. New Castle County had slightly better than a 5-1 ratio; Kent a little better than a 3-1 ratio; and Sussex a little under a 2½-1

TABLE IV
IMMUNIZATION STUDY
Jan. 1 - Mar. 31, 1952

STATE WIDE
PART 1

	White		Non-White		Combined	
	Number	Percent	Number	Percent	Number	Percent
1. Number in follow-up study	1628	81.4%	372	18.6%	2000	100%
2. Certificates received	146		72		218	
Well Child Conferences	67		70		137	
Private Physicians (29)	79		2		81	
3. 1st letters mailed	1482		300		1782*	
4. Postal cards returned	701	47.3% (1)	69	23.0% (1)	770	43.2% (1)
5. Check-up Forms to Physicians	101		21		122	
6. Check-up Forms returned	90	89.1% (2)	13	61.9% (2)	103	84.4% (2)
7. 2nd letters mailed	771		241		1012	
8. Mimeo'd forms returned	335	43.5% (3)	60	29.0% (3)	395	39.0% (3)
9. Returns—postal cards and mimeo'd forms (119 physicians)	1036	70.0% (1)	129	43.0% (1)	1165	65.4% (1)
10. Not located—1st and 2nd letters	90	6.0% (1)	23	7.7% (1)	113	6.3% (1)
11. No reply—to both 1st and 2nd letters	356	24.0% (1)	148	49.3% (1)	504	28.3% (1)

(1) — based on numbers in line 3

(2) — based on numbers in line 5

(3) — based on numbers in line 7

INFORMATION FROM CERTIFICATES AND ALL OTHER RETURNS

PART 2

Certificate, Postal Cards and Mimeo'd Returns	1182	72.6% (4)	201	54.0% (4)	1383	69.2% (4)
No immunization	174	14.7%	41	20.4%	215	15.5%
Triple Vaccine (DPT)	858	72.6%	132	65.7%	990	71.6%
Well Child Conferences	105	8.9%	112	55.7%	217	15.7%
Private Physicians	753	63.7%	20	10.0%	773	55.9%
Other than Triple Vaccine	32	2.7%	2	1.0%	34	2.5%
Smallpox Vaccination	293	24.8%	53	26.4%	346	25.0%
Well Child Conferences	43	3.6%	42	20.9%	85	6.1%
Private Physicians	250	21.2%	11	5.5%	261	18.9%
Incomplete	52	4.4%	6	3.0%	58	4.2%
Well Child Conferences	11	0.9%	5	2.5%	16	1.2%
Private Physicians	41	3.5%	1	0.5%	42	3.0%
Out-of-State Immunizations	34	2.9%	2	1.0%	36	2.6%
Triple Vaccine	29		2		31	
Other than Triple Vaccine	5		0		5	
Smallpox Vaccination	21		1		22	1.6%
Undetermined	23	1.9%	12	6.0%	35	2.5%
Deceased	9	0.8%	6	3.0%	15	1.1%

(4) based on line 1, total number in follow-up study

*Actually 1856 letters with postal cards were mailed. In 74 instances immunization certificates were received subsequent to mailing the follow-up letters. These 74 were included in the certificate count and excluded from all postal card counts. On basis of 1856 approximately 63% replies were received.

ratio. Statewide, the ratio of white to non-white children was approximately 4-1.

No Immunization. The returns showed Sussex County with the highest percentage of no immunizations. New Castle County showed the lowest percentage of no immunizations, while Kent County was midway between. In both New Castle and Sussex Counties the non-white groups showed a higher percentage of no immunizations than did the white groups. However, in Kent County the

white group had a higher percentage of non-immunized children than the non-white group. The white group in New Castle showed the lowest degree of non-immunizations, with the non-white group in Kent County next lowest.

The replies to the second letter contained a higher percentage of no immunizations than did the postal cards. Whereas only 95 or approximately 12% of the 770 postal cards returned indicated no immunization, 120 of

the 395 second letter returns, or approximately 30%, listed no immunization.

Immunization against Diphtheria, Pertussis and Tetanus. Triple vaccine was used with but very few exceptions. The highest percentage of immunization with triple vaccine was shown by the non-white group in Kent County. The white group in New Castle was next. The counties varied in their degree of immunization. New Castle had the highest percentage of diphtheria, pertussis and tetanus immunization with approximately 8 out of 10 children. Kent was second with about 7 out of 10, and Sussex poorest with 6 out of 10.

Statewide, approximately 74% of the replies, excluding out-of-state returns, indicated their child had been immunized against diphtheria, pertussis and tetanus. If the out-of-state replies are included, the percentage rises to slightly over 76%. This percentage would rise to 79% if the undetermined group were also included and could rise to 83% if one assumed that all incompleting immunizations were completed. At worst, assuming that all those not located and all failures to reply indicated no immunization, approximately 53% (1060 out of 2000) or slightly better than 1 out of every 2 infants were immunized, statewide, during the first year of life or thereabouts.

Where products other than triple vaccine were used for immunization, about half still received immunization against diphtheria, pertussis and tetanus. A few children were immunized against diphtheria alone. One physician supplemented the use of triple vaccine with added immunization against pertussis.

Smallpox Vaccination. Smallpox vaccination was highest among the non-white group in New Castle County. Next highest was the white group of that same county. The returns indicate that only 1 out of every 4 children is vaccinated during or shortly after the first year. The extent of vaccination is particularly low in Sussex County, where the replies indicate about 1 out of 10. Again, if one were to assume that all those not located and all failures to reply indicated no vaccination, the percentage would drop to 18% (368 out of 2000) or less than 1 out of 5 children on a state-wide basis. It is inter-

esting to note that 61% (22 out of 36) of the children immunized out of state against diphtheria, pertussis, and tetanus were vaccinated against 34% (346 out of 1024) of the group so immunized in Delaware.

By Whom Performed. Four infants were immunized by private physicians for every infant immunized at a well child conference. The returns indicated that by far the greater percentage of the white group in each county was immunized by private physicians, while the non-white groups in all three counties had their immunizations performed principally at well child conferences conducted by the State Board of Health. For the white group the ratio was approximately 7 by private physicians for 1 at a well child conference. For the non-white group for every child immunized by private physicians, there were approximately 6 immunized at well child conferences. Kent County provided the highest percentage of immunization by private physicians to the non-white groups.

Comment. The fact that the second letters contained a higher percentage of no immunization replies than did the postal cards would indicate that had there been a third or fourth follow-up letter, the percentage of no immunization in successive replies would increase. On this basis one might predict that the percentage of immunization against diphtheria, pertussis, and tetanus is around 70% and the percentage of vaccination probably below 20%.

SUMMARY

The immunization status of 2000 infants was followed up about a year after birth. Information secured on approximately 70% of the group revealed that 76.7% had been immunized against diphtheria, pertussis and tetanus, but only 26.6% had been vaccinated against smallpox.

The low percentage of smallpox vaccinations during or shortly after the first year of life warrants a greatly increased effort on the part of the physicians and others concerned to improve the situation.

Although the degree of immunization of infants against diphtheria, pertussis, and tetanus is encouraging, continued stress on such immunization is necessary if Delaware is to approach the goal of 100% immunization.

RETRENCHMENT IN VD CONTROL ACTIVITY

WINDER L. PORTER, M.D., M.P.H.,*
Dover, Del.

The antibiotic era has entirely revolutionized the program for venereal disease control. The story is now familiar both as to notable success in preventing further spread of infection as well as to gratifying adaptability for prompt and efficient management of infections of all ages. Reduction in case load and lessened attention required for each patient has quite properly led to reduction in clinic sessions and to lower appropriations for VD control. But there remains a large area of activity necessary to screen many individuals to discover other unknown cases which already exist, and to track down newly acquired infections and their sources. There is the further obligation to follow each treated patient to insure that his treatment has brought him the maximum benefit to be expected. Budgetary restriction then is not unexpected, but the Delaware State Board of Health had not anticipated that the U.S.P.H.S. would completely eliminate its support for the venereal disease control program, and so must now exercise stringent economies to be able to conduct a program at all.

There was a time when we could boast that no patient in Delaware need travel more than 15 miles to reach a clinic operated by the State Board of Health for treatment of venereal disease. Elimination of clinics at Seaford and Lewes have already made that boast obsolete; now it will become just a memory. In essence, what now will be obtained will be the maintenance of a single diagnostic clinic in each county with weekly sessions to screen patients and their contacts and to outline for them the best management obtainable under the circumstances. In Sussex County, a clinic will be held at Georgetown only. Convenience of location and accessibility to the laboratory would dictate that the diagnostic clinic for Kent County be held at the Dover offices. However, a session here will be conducted only once per month, while the regular weekly clinic at Milford will be maintained because the case

load in this area is more productive, embracing more treated patients to be followed, more new infections, and more contacts in need of investigation. The Smyrna clinic will be abandoned.

There will be no regular VD clinic in rural New Castle County, although the health officer will attempt to establish machinery to care for the occasional problem case presented when referral into Wilmington cannot be carried through. Wilmington clinics will no longer operate daily, but will be conducted on three days each week with hours staggered to meet the needs of shift workers.

It becomes necessary to dispense with capable clinicians who have given years of loyal and efficient service. Clinics, henceforth, will be conducted by health officers and other full-time staff physicians.

To lessen demands upon the time of nursing personnel, epidemiologic activity will be approached from an entirely different point of view. Priority will continue to be given to pregnant women with syphilis and to contacts of known infectious cases. Patients who have had syphilis less than two years will be closely followed while responsibility for most other patients will be surrendered when their treatment is completed. They will be advised as to the need for further observation at stated intervals, but no effort will be made to locate them if they fail to return. Gonorrhea patients and female contacts named by gonorrhea patients will be given full doses of penicillin when first seen and then handled as indicated above. This dismisses the very important obligation to screen for syphilis which may have been acquired simultaneously with the gonorrhea, as well as the obligation to be certain that treatment has been adequate to effect a cure and that the patient has not become reinfected by further exposure to the original contact before she too has received treatment.

The value of a spinal fluid examination in the management of every syphilitic patient is fully appreciated, even though we have never succeeded in securing more than a small percentage of those recommended. This will be made a part of the diagnostic screening when accepted by the patient, but

*Chief, Division of Venereal Diseases, Delaware State Board of Health.

will not be forcefully urged unless there is some strong indication. Failure to secure a spinal fluid examination will not prevent suspending efforts to have the patient return for further observation. Similarly, mothers who have borne children after treatment for syphilis will be advised to have serologic tests on those children but will no longer be repeatedly reminded unless there is reason to believe that treatment for the mother has not been adequate.

This Health Department has prided itself upon being a pioneer in adopting ambulatory treatment for syphilis with delayed absorption forms of penicillin. Schedules adopted have been well received and signally successful, and the state has been spared the expense of maintaining an in-patient service. Yet it is with some trepidation that we face the reality that daily treatment can no longer be guaranteed and that we must resort to newer combinations which, while offered with encouraging preliminary reports, lack the backing of proven results with adequate material. Ordinarily we would welcome the opportunity to participate in a program for the evaluation of such a product, but in this instance we can contribute nothing of statistical merit and will proceed more or less empirically. We propose to add Bicillin to our treatment program but will adjust dosage and number of injections to each individual situation.

For some time patients have been referred to private physicians to complete their treatment when clinics did not meet sufficiently often, or were relatively inaccessible. A satisfactory relationship has been built up with a number of physicians, although some have objected that the fee has been too small. Even that fee cannot be continued and we must explore other ways to meet the problem.

Lack of funds will also find repercussions in the quality of service available from the laboratory, much of whose routine work consists of serologic testing for syphilis, financed by specific grants for VD work. Tests will be made only on fixed schedules so that premarital and similar tests cannot be run as rush jobs, and physicians will at times be inconvenienced by delays of several days before reports are received. Serious considera-

tion must be given the question of continuing two serologic tests as a routine, or whether a single exclusion test will be performed. Physicians in Delaware have become accustomed to following their patients with serial Kahn tests and would be very much handicapped, particularly during a period of transition to some other test. For the present, the aim will be to continue the two tests, but the volume of work will help determine whether this regime can be continued.

It is well-known that the VD patient often presents himself for some other medical problem which may remain in need of attention when his VD problem is met. Often indeed, he has been referred by a physician who has been uncertain as to how much his VD is responsible for his complaints. Many patients who have continued to be served with appraisal for these related conditions, will now be obliged to seek help elsewhere. This will work a real hardship for some persons downstate where there are no hospital clinics to turn to. As always, they will be urged to place themselves under the supervision of their own family physician but regular attention will often be quite beyond the means of many individuals.

This is not to be construed as implying that the clinics offer treatment for ailments out of the field, but that they do aim to be thorough in appraisal of all patients for whom they are responsible.

SUMMARY

Heavy cuts in appropriation for VD control in Delaware will necessitate a greatly altered program:

- a. Some clinics will be eliminated, others will operate less frequently.
- b. The quest for potential new cases must be relaxed.
- c. New treatment schedules must be developed to conform to reduced frequency of clinic sessions.
- d. A new relationship with private physicians in the treatment program must be developed.
- e. Emergency laboratory service must be curtailed.
- f. Many "fringe benefit" services for the VD patient must be eliminated.

RESIDENCY TRAINING PROGRAM OF PUBLIC HEALTH IN DELAWARE

C. P. KNIGHT, M.D.*

Dover, Del.

Dr. Wilson G. Smillie in his book "Preventive Medicine and Public Health" has stated that he has made a distinction between preventive medicine, which he considers a function of the individual in promotion of personal and family health, and public health as a community function. He states further that he may be accused of hair splitting sophistry, since there is an obvious overlapping of these functions with no clear cut distinction between them. He, however, finds his own distinction useful in organizing the instruction of medical students. Further, his idea is that a physician should know the general principles of environmental sanitation but need not be familiar with the details, since he will not be responsible for their administration. He brings out, however, that should a physician wish to enter the public health field as an administrator, he must take special training to prepare himself for such a career. This latter statement will be the theme of this paper. The ideal full time health officer for city, county, or state should fulfill the following qualifications: He should be a graduate of an approved school of medicine, following with one or more years of approved internship. He should then avail himself of the opportunity of a post graduate course in an approved school of public health with a curriculum leading to a degree of master of public health. Lastly, he should apply for residency training in a state approved for this purpose. Inasmuch as there are always exceptions to rules, there exist many health officers who, due to years of training and experience in all phases of public health, are quite able to meet the requirements of the American Board of Preventive Medicine and Public Health.

A few years ago the American Board of Preventive Medicine and Public Health inaugurated a residency training program for qualified applicants who desire certification in preventive medicine and public health by this Board.

The definition of the term residency as used in the Report and Recommendation of Nationwide Working Conference on Public Health held at Chapel Hill, North Carolina, December 3-5, 1951 is as follows:

An approved residency for the physician in preventive medicine and public health is that portion of advanced training in the specialty which provides a planned and supervised field experience in the practice of public health in a health department duly accredited for such training.

While the basic principles of a residency in preventive medicine and public health are the same as those of residencies in the clinical specialties, there are important differences in the manner of their affiliation. First, the agency in which the training is given is not a closely integrated institution, but a field agency whose activities extend to the furthest approaches of the community.

Second—In clinical residencies the patient is an individual and the important need is to expand the resident's knowledge and give experience in newer techniques to develop necessary skills to all the specific problems in the specialty.

Quite opposite to this, in a public health residency it is necessary for one to develop a new concept. The trainee must realize that the entire community is the patient for which the health department is responsible. He must acquire new skills for diagnosis and treatment of the total health needs of the community. The requirements include an approved residency (after internship) of at least two years of supervised field experience in general public health practice which provides planned instruction, observation, and active participation in a comprehensive organized public health program. It is provided, however, that one year of such period may be satisfied by an approved clinical residency in a field directly related to public health.

In other situations, the second year of supervised field experience may be satisfied by a responsible service as a full time assistant to a health commissioner or program director of a health unit approved for such purpose, or as health officer of a county health department, city health department, or state health district in a state wherein

*Deputy State Health Officer, Assistant Director of Training, Delaware State Board of Health.

the State Health Department is the agency approved for the residency training program.

At the present time there are twelve or more states in the nation which have been approved by the Council of Medical Education and Hospitals of the American Medical Association. The State Board of Health of Delaware made application to set up a residency training program. The application was approved in the spring of 1951 by the Council and the American Board of Preventive Medicine and Public Health.

Delaware, through the State Board of Health, was chosen to conduct such a program, for the fact that it has well established local health jurisdictions within which the field training can be carried out. Also, the staff personnel are qualified, by experience and ability in public health practices and teaching, to assume the responsibilities for the standards, goals, conduct, and supervision of a residency training program. At the present time Kent County and New Castle County, exclusive of the City of Wilmington, have been designated as the selected areas.

GENERAL STATEMENT OF RESIDENCY

TRAINING

The curriculum for the residency training program in Delaware is developed in such a way that 75% of the entire study will be spent in a local training area. 25% will be spent at the state level. The content of the course as outlined, with a specific number of weeks in various fields, does not mean that the exact number of weeks will be spent consecutively in the study of any one particular field. However, the work will be integrated in such a way that the total time spent will approximate the time entered in the schedule.

As far as orientation is concerned, it was felt that a big dose of this at the beginning was undesirable. Two to four weeks of orientation becomes extremely confusing to the trainee. It is the Board of Health's opinion that orientation in the various subjects will come with progress in the course, and that only a few days of preliminary explanation, in which the various services are described and the agencies with which we work are outlined, will be sufficient for the trainee to begin actual work in the division in which he

will learn more fully the details of inter-division and intra-agency cooperation.

PRESENT CURRICULUM—AT LOCAL LEVEL

1. General Administration (4 weeks).

The course will include all aspects of local health administration such as program planning, the conducting of programs, participation in local community organization, activity in physician and public relationship, budget planning and financing of local health units, administrative records and reports, local records, family folders, state reports, periodic reports. Annual reports and forms used for both administrative and clinical activities will be studied, also cooperative relationships with local officials and voluntary health and welfare agencies. Hospital and Health Center Construction Act and its application on local level will be studied. Administration of services will be taken up in general by the health officer and in particular by the persons responsible for individual services. The trainee will take part in weekly local and monthly state staff meetings.

2. Maternal And Child Health (8 weeks).

Trainee observation and participation in Well Baby Conferences (immunizations, vaccination, physical examinations and infant feeding). Conduct pre-natal and post-natal clinics and related activities. Inspection of nursing homes and hospitals. Midwife instruction and licensing. School hygiene, conduct physical examination of school children (appointment system, parents present). Discuss child's condition with parent and make necessary recommendations, follow-up activities with public health nurse. Organize and participate in classes for expectant parents. The observation of prophylactic, corrective and preventive measures carried out in dental hygiene clinics. This includes techniques of sodium fluoride application. Study the local cause of maternal and infant mortality, particularly in conjunction with the survey of State Medical Society. Participate in premature infant program.

3. Preventable Diseases (8 weeks).

Epidemiological investigations, maintaining of carrier registers, tuberculosis registers, special immunization clinics, tuberculosis clinics for diagnosis, case finding and ambulatory treatment, arrangements for hospitalization

of tuberculosis and other communicable disease cases, the actual operation of the mobile x-ray detection clinic. Study the cases and reading of films. Learn how to use Fluoroscope. Participate in cancer detection clinics and heart disease control activities, venereal disease case finding, venereal disease records and reports. Trainee will also investigate contacts of venereal disease. Follow-up of case and actual clinical treatment will be included in this course. Consultant services to physicians.

4. Public Health Nursing (8 weeks). To participate in weekly staff conferences in which local nursing problems, nurse personnel, etc. are discussed. Opportunity will be afforded trainee to participate in actual case work with a qualified public health nurse, in the field, office and clinic. The relationship of the local health officer to the public health nurse and to workers in non-official health agencies will be demonstrated. The matter of records, reports, and forms utilized by nurses will be carefully studied. The benefits of the generalized nursing service will be given attention. Will study and observe the duties and functions of a public health nurse and determine how nurse's time is allocated to the various services rendered.

5. Sanitary Engineering (8 weeks). Participation in general sanitation, including food, milk, water, sewage and industrial waste disposal and water pollution control. Consultations and conferences with State Director of Sanitary Engineering. Trainees will participate in the inspection of eating and drinking establishments, pasteurizing plants, dairy barns, milk processing including frozen dessert plants, bottling plants, public school sanitary and eating facilities, water sewage systems and shell fish facilities, institutional and industrial plant sanitation, canneries and slaughter houses, housing conditions, rodent, vermin and insect control. Trainees will study the administration of a general environmental sanitation program and relations with state and Federal health agencies. The educational ground work necessary for the securing of laws, rules, and regulations in communities will be stressed. Trainees will study and participate in the laboratory and field tests used in general environmental sani-

tation programs. Plans for new community improvements will be made and studied; this will include sewage disposal systems, water purification plants, etc. Trainees will study and participate in the keeping of adequate records in all phases of a sanitation program. Methods of planning and conducting food handling schools and programs for other phases of a sanitation program will be studied and participated in by the trainees. Special studies and field trips will include industrial plant sanitation. The industrial sections of the E. I. du Pont de Nemours, General Motors Company, and other companies, will be used. Poultry processing and food canning and handling plants will be inspected, studied and reported upon. Methods of correction of violations will be practiced.

6. Vital Statistics (1 week). The trainee will be assigned to work with the local registrar in registering births, deaths and marriages, and will carry out the provisions of the state regulations concerning handling and transportation of the dead. The registration of a birth and death will be followed from the originator of the record through the local registrar to the state and national levels. Trainee will check for promptness of reporting, correction of data on vital records. This will include the checking of diagnoses of coroners on dubious cases.

7. Public Health Education (1 week). The trainee, under general direction of the health officer, plans, organizes, supervises, and carries out a program of public health education including talks to groups of citizens. Will participate in the local in-service training program. Trainee will cooperate with the State Council of Welfare Agencies and local councils and other organizations interested in the general health education of the public. The trainee will be required to attend meetings and conferences relating specifically to health education programs.

PROPOSED CURRICULUM—AT STATE LEVEL

1. General Administration (1 week). Brief introduction to public health on state and national levels. Relationships with national health agencies, description of the state health agency, its divisions and various functions. Assignment of trainee to health officer's desk to observe and participate in the routine daily duties. Studies of the poli-

cies of the department and relationship of the department to other state agencies. Will participate in the direction and supervision of local health units to assure adequate health programs are being furnished. Practice will be given in the solution of fiscal problems including budget planning and securing of appropriations.

2. Maternal Child Health and Crippled Children's Services (2 weeks). The trainee will study and participate in the administration of all phases of these services and will assist the director in the preparation of the surveys, weekly, monthly and annual reports. Records will be maintained personally by the trainee. He will observe and participate in orthopedic, cerebral palsy, hard-of-hearing, speech defects, and cardiac diagnostic clinics. He will participate in the crippled children's hospitalization program at the A. I. duPont Institute and at Governor Bacon Health Center. Problems of nutrition relating to all these services will be reviewed and studied. The trainee will be given an opportunity to participate in program preparation. He will be expected to prepare material on nutrition and make field visits with the state nutritionist.

3. Preventable Disease Control, including Tuberculosis and Venereal Diseases, so-called Degenerative Diseases (2 weeks). Brief review of the development of these programs, particularly those relating to the degenerative diseases. Study of the value of each program and how they may be coordinated. Reference will be made to multiphasic examinations. Discussions of laws and regulations pertaining to communicable and other diseases. Study of the past and present trends in the leading causes of death. Trainee will visit several state institutions, i.e. tuberculosis sanatoria, the Delaware State Hospital (for the mentally ill), the Delaware Colony Training School (for mentally retarded children), etc.

4. Public Health Nursing (1 week). Trainee will study and participate in the planning of nursing activities, and the administration of the nursing program. The importance of in-service education and nursing records and forms will be further subjects of study. The coordination and integration of state public health nurses' work

with the school nurse, VNA and industrial nurse will be stressed. The part that the director of Public Health Nursing and the special nursing consultants play in relation to the local Public Health Nursing Supervisor and nurses will also receive attention.

5. Health Education (2 weeks). Trainee will assist in planning, developing and integrating programs on a state-wide basis. He will attend health conferences and institutes; give talks at medical meetings, PTA's, service groups, etc. Also will be given the opportunity to do radio and television work. He will prepare releases for the press; review and criticize health films; prepare and judge exhibits and assist in the preparation of programs for in-service education.

6. Sanitary Engineering (1 week). The trainee will assist in reviewing and approving plans for installation of sewage disposal and water supply systems. He will review briefly the laws and regulations pertaining to water supply and sewage disposal. He will accompany an engineer or plumbing inspector or both on such inspections. He will be assigned to the water pollution commission for study of the problem of stream pollution. He will observe and participate in the taking of samples of streams and follow the analysis through to its termination. He will consult with the director and assist him in determining the most feasible solution of the problem concerned.

7. Laboratory Service (1 week). A study of laboratory facilities available to the physician and various methods of collecting specimens and transportation to the laboratory. He will observe and assist the director in serological, bacteriological, agglutination, chemical, cytological and other examinations; also culture work and animal inoculations. There will be field visits to hospitals and private laboratories to inspect same for approval.

8. Statistics (1½ weeks). The trainee will acquaint himself with the methods of registration of births, deaths, marriages and divorces and will review the laws relating to same. He will study the method of coding and filing after having checked the certificate for errors. The permanent filing of registered certificates will be observed and studied; also issuance of certified copies of

births, deaths and other registered certificates. The problem of delayed registration of birth certificates will also receive attention. Methods for determining completeness of registration will be demonstrated. He will participate in the collection, tabulation, analysis and interpretation of statistics relating to public health programs.

On the successful completion of the above course of training plus the requisite qualifications and experience, a candidate is eligible to take the examination for certification by the American Board of Preventive Medicine and Public Health.

Grateful acknowledgement is made to the five members composing the Advisory Committee in aiding in the development of the training program. Those serving at the present time are outstanding in the respective professional fields. They are Dr. Ernest Stebbins, Director of the School of Hygiene and Public Health, Johns Hopkins University; Dr. Alfred R. Shands, Jr., Medical Director, A. I. duPont Institute; Dr. W. O. Penrose, Dean of School of Education, University of Delaware; Dr. W. Edwin Bird, Executive Secretary, Medical Society of Delaware; and Lamont duPont, Jr., Chairman of the Delaware Chapter, American Red Cross. Acknowledgement of appreciation is also made to various employees of the State Board of Health in aiding in the preparation of the program.

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THE PROBLEM OF "FRINGE AREAS"

DONALD K. HARMESON, M.S., M.P.H.,*
Dover, Del.

Shelter is one of the basic human needs. "Where shall we live?" is the first question asked by every new family in a community. With satisfactory building areas within town or city limits at a premium, the modern house hunter has gone beyond these boundaries to build his "Castle". The automobile and good roads have greatly influenced this change in the housing pattern. This has created the "suburban fringe area" with its

problems of sanitary facilities such as water supply, sewerage and the disposal of trash and garbage.

In Delaware this trend was evident in the 1950 population statistics. Between 1940 and 1950 the population of New Castle County increased 39,317 people. During the same decade Wilmington lost 2,148 inhabitants. Since 1950 this pattern seems to have continued, as is evidenced by the continuous growth of unincorporated housing developments throughout the upper third of New Castle County. The industrial development of the Newark area has given an added impetus to this boom. In Kent County the considerable expansion of the Dover Air Force Base has started a smaller building boom.

Such expansion creates many problems, particularly if it is poorly planned and not controlled by satisfactory regulations. Among the sanitary problems which may arise are nuisance conditions caused by overflowing cesspools or the indiscriminate dumping of refuse; inadequate surface drainage; low water pressures; improperly located or constructed wells; and polluted streams.

Delaware has been fortunate in that there have been several factors which have been of assistance in New Castle County, the area of greatest expansion. These are the New Castle County Regional Planning Commission, the County Plumbing Code, the law enabling the establishment of sanitary districts, and the Water Pollution Control Act. To these has recently been added the Zoning Commission.

All plats of developments in New Castle County which propose the dedication of the streets as public property must be approved by the Planning Commission before the plat is recorded. The Commission in turn requires the approval of the State Board of Health, the State Highway Commission, and the County Engineer. This leads to an orderly development of the unincorporated areas of the county. A more comprehensive plan of development will be available with the completion of the zoning map of the county.

In Kent County the plumbing code, brought about by a legislative act of 1949, has been of assistance in improving the sanitary facilities of new homes. There is no plumbing

*Director, Sanitary Engineering, Delaware State Board of Health.

code in Sussex County. There are also no regulations requiring comprehensive planning of proposed housing developments in Kent and Sussex Counties. Therefore, it is possible for a developer to choose swampy land or land in tight clay soils, divide it into small lots and build houses provided with individual wells and waste disposal facilities. Such facilities crowded together on inadequate area are a definite health hazard.

With these problems in mind an attempt was made during the 1953 legislative session to secure necessary regulations and the personnel to put them into effect. A proposed act regulating housing developments throughout the state was submitted but was unsuccessful. The need for additional personnel to be used in sanitation activities and in the follow-up of pollution control activities was stressed in the presentation of the budget. Although not sponsored by the State Board of Health, a bill to establish zoning commissions in Kent and Sussex County was also not successful. One measure which may be of considerable assistance in the financing of water and sewerage facilities for both unincorporated housing developments and for established towns is Senate Bill 372 which was approved by Governor Boggs on July 15, 1953. This bill permits the establishing of water and sewer authorities. Its provisions are described in another article in *THE JOURNAL*.

From the foregoing it is evident that there are many needs to be met. The state-wide control of housing developments should be established by regulations. This would provide for the adequate planning, proper location, and uniform construction of all proposed developments. Such regulations would not have the affect which could be obtained with a good zoning law. They would do much to illustrate the advantage of zoning and would supplement such requirements. In addition to regulations controlling housing development an adequate staff is necessary to make certain that they are carried out. The State Board of Health is presently engaged in a search for additional personnel who will assume some of these duties. This is a much-needed step toward the solution of this wide-spread problem resulting from the migration of city dwellers. We shall attempt to im-

plement this first step with adequate regulations giving state-wide control of these suburban areas.

FINANCING MUNICIPAL WASTE TREATMENT

A. JOEL KAPLOVSKY, Ph.D.,*
Dover, Del.

The Delaware Water Pollution Commission was created with the expressed purpose of safeguarding the quality of state waters against pollution in such waters and controlling any pollution existing there at the time of the adoption of the Delaware Water Pollution Control Act of 1949.

There are two basic phases to our water pollution abatement program: investigative or survey period and follow-up phase. The investigative portion constitutes a detailed study of the various contributing wastes within a specific drainage basin; and, based upon the findings and best water usage, recommendations are made to improve the existing conditions wherever needed. All efforts expended in an initial study phase would be fruitless if there were no adequate follow-up. Follow-up constitutes fulfilling the recommendations by either waste prevention practices and/or waste treatment facilities. Construction cannot be realized without an expenditure of funds; consequently, the problem of financing will always be an important issue of the follow-up program.

Many communities are now required to furnish more and more facilities for an increasing urban population. Rapid development in the state of Delaware has also resulted in a tremendous number of small community developments in rural areas. Serious problems of finance will continually arise for the building and maintaining of vitally needed water and sewer services. The burden, in the past, had often rested heavily upon property taxation. This source of revenue has been greatly overloaded, and it had become imperative to seek the needed revenue elsewhere. Therefore, when existing services had been necessarily expanded or new services provided, municipalities have been forced to levy a special service charge to finance the improve-

*Supervising Engineer, Water Pollution Commission, State of Delaware.

ment and its subsequent operation and maintenance.

There is a considerable diversity in the charters and enabling acts, many of which are not clear in their language relating to the organizing, particularly the financing provision, and are often limited and restrictive in their wording. Often cities, which have had difficulty in getting a favorable opinion on revenue issues because of defect in existing laws and necessary statutory authority, find the remedy in presenting their needs at their earliest forthcoming legislative session.

The prevailing method of organizing for water and sewage works include the following:

(a) A municipality organized with power to finance and construct water and sewage works, within its own limits, for its own population and for adjacent areas by contract.

(b) Municipalities and some unincorporated lands, favorably located, have been organized and often referred to as water districts, sanitary districts, or authorities.

(c) Private water and sewage companies have been organized to finance, construct, and operate water and sewage works for single municipalities and metropolitan areas.

In the commonwealth of Pennsylvania a good financing program has proven to be the mainspring for increased pollution abatement. Sewer authority legislation passed at the Maryland 1951 legislative session will expedite progress in the construction of needed waste treatment facilities. In the state of Delaware only one of the three counties has the authority to create sanitary districts. New Castle County has utilized this authority most ably, as exemplified by the present construction of the Wilmington-New Castle County trunk sewer project. Through the continued efforts of the Mayors' Association, a bill was presented and passed by the state legislature which provides an amendment to Title 16, Delaware Code 1953, entitled "Health and Safety" by adding a chapter thereto relating to the establishment of water and/or sewer authorities. This amendment is deemed to be an additional and alternative method for the doing of the things authorized thereby and should be regarded as supple-

mental and additional to powers conferred by other laws. This law will add a means of raising vitally needed funds for the above specified purpose. It would be an asset to the solving of certain financial problems in Kent and Sussex Counties.

The law is rather complete. It contains the important considerations which were emphasized in a committee report of the American Society of Civil Engineers. It provides for the creation of sanitary districts by local petition followed by a general election. It recommends that the administrative board should be composed of members elected locally. The enabling acts include a broad general grant of powers rather than specific direction, subject to provisions imposed by the state Constitution and later court decisions establishing the rights of a sanitary district, as regards methods of financing. The authorities possess the usual basic powers, such as making of rules and regulations; join with other districts and municipalities and exercise of common powers; contract with others to provide or receive sewage disposal service; make and apply rates of charge for sewage disposal service and force penalties for non-payment.

The law "constitutes full and complete authority, without regard to provisions of any other law for the doing of the Acts and the things herein authorized, and shall be liberally construed to effect the purposes hereof; provided, however, nothing herein contained shall be taken as restricting any control which the State Board of Health, State Highway Department, and the Water Pollution Commission are empowered to exercise over or within any authority."

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+ Editorials +

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ANDREW M. GEHRET, M. D. _____ Associate Editor
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M. A. TARUMIANZ, M. D. _____ Assoc. & Managing Editor
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VOL. 25 SEPTEMBER, 1953 No. 9

LOWERING THE STANDARDS

From the annual report of the Dean of the Faculty of Medicine of Columbia University for the academic year ended June 30, 1953, we learn for the first time that the state of New York has lowered the requirements for medical licensure in that state drastically. We could not possibly agree with the action taken by the state of New York, and are proud of the fact that little Delaware has always maintained a big standard—meaning the very highest. This New York Act will have its repercussions all over these United States; let us hope that none of the other states will follow New York in this most undesirable course. We can do no better than to quote Dean Rappleye's report verbatim:

The Brydges Act

At the present time there are approximately 17,000 approved internships and 3,940 approved residencies in the state of New York. In view of the fact that about one-sixth of

the approved internships and approximately one-fifth of all of the residencies in the United States are in New York State, a recent action by its legislature is of national as well as local significance. As of July 1, 1953, the educational requirements for internship, which have been a part of the present state education law for many years although not enforced, will be repealed. A new law will permit all hospitals to appoint interns without regard to their educational qualifications, and many hospitals to appoint residents under the same conditions. The state intends to solve the problems of staffing the hospitals by abdicating essential standards which it had adopted in the past. Some of the extravagant statements and dire predictions by the advocates of legal recognition of lower standards merely reflect their unwillingness or inability to come to grips with this vital question. There are approximately 1,000 graduates from unapproved medical schools now serving in the hospitals of the State of New York. The employment of hospital staffs which do not meet the professional requirements recognized throughout the country, and even perhaps by the courts of the State, may introduce a number of interesting and serious consequences to the hospitals that employ such staffs should those institutions be sued for malpractice or damages.

Those who have advocated and secured the passage of legislation specifically repealing the qualifications for internship and weakening those of residency training have done so on the allegation that by so doing the hospitals of the State would be made available for the education of foreign physicians. Reference is made to the desire to "equalize the education of the foreign graduate" and capitalize on his broad interest in "postgraduate medical education." It is difficult, however, to understand how it is possible to compensate for the inadequate preparation of many of these graduates from medical schools which are below acceptable standard by placing them in "postgraduate training" in hospitals that provide practically no training program.

It is all too obvious that the device is essentially a method of securing house staffs for hospitals that are not otherwise able to attract graduates of approved schools. It is equally clear that there is no intention to conduct these internships on an educational basis. Some other term should be used for the employment of these individuals than "interns" or "residents".

In the United States the internship has come to be accepted universally as an essential part of the preparation of the physician. It is requirement for licensure in no less than twenty-seven states and most territories. The residency plan has been accepted everywhere as the basis of true graduate medical training. To use these two important designations, which are accepted generally as a part of the educational pattern of American medicine, as a lure for the recruitment of large numbers of untrained or in incompetent individuals is likely to discredit the entire effort to maintain professional standards in this country.

Those who sponsored the legislation in New York maintain that the standards are not lowered. It seems to be evident now that the standards are not reduced they are merely eliminated. A recent announcement of the new program states that it will permit "interns who are generally under close supervision to come from any source." Nothing could be more misleading in many instances than to speak of "close supervision." The important phrase is "from any source."

Serious damage may be done to international good will through those who come here with the impression that they will obtain graduate medical training, which, when under the proper auspices in the country is unequaled in the world. Fortunately, for international relations, very few of the foreign physicians intend to return to their own countries. Hence, the false and pious claims of educating them in hospitals which offer no instructional plan will not have a serious effect on international relations.

STATE BOARD OF HEALTH NUMBER

Once again, for the 24th year, this issue

of THE JOURNAL presents the activities of the Delaware State Board of Health. This feature is one not emulated by many of the other state medical journals, but we find it profitable to publish it because it benefits the department, the profession, and the public. The material this year maintains the high standard that has been set forth these many years.

THE JOURNAL is happy to extend to Dr. Floyd I. Hudson, the Executive Secretary of the Board of Health, and to all his collaborators, its thanks for the material they have contributed.

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(Concluded from Page 276)

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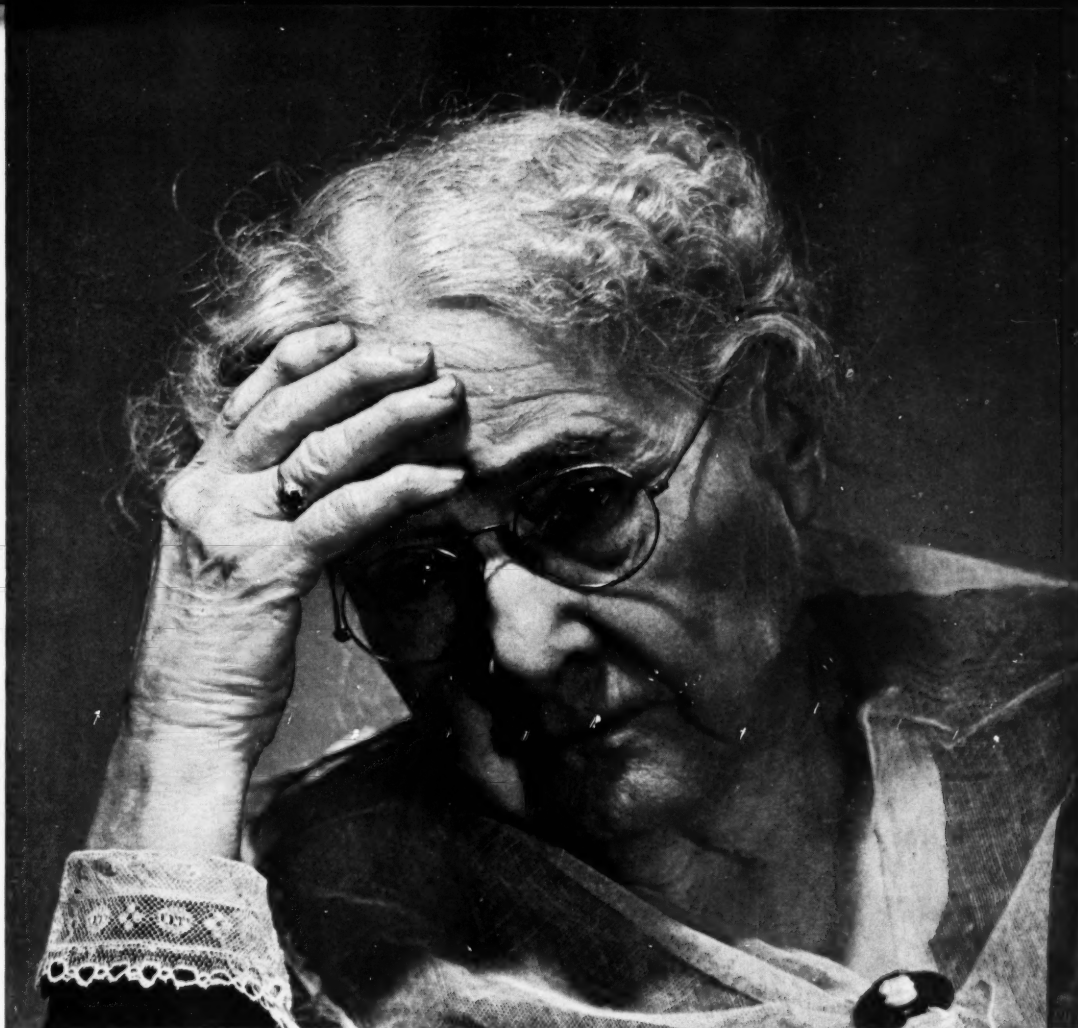
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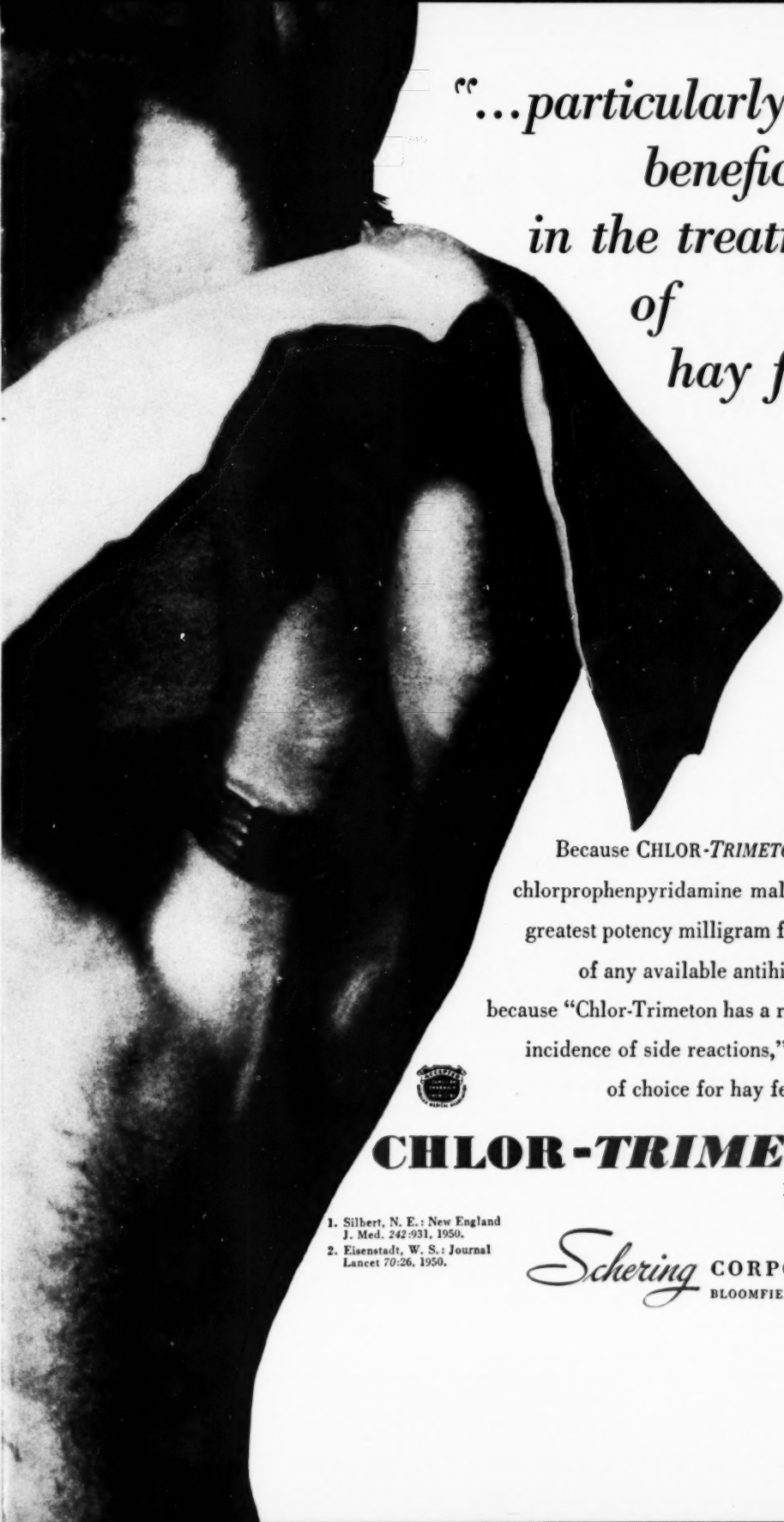
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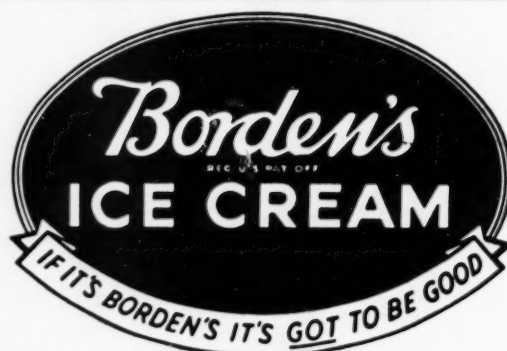
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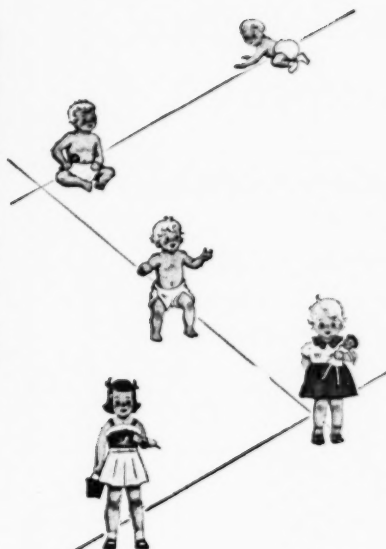
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